DICOM Conformance Statement, X150

1.0 Purpose 5

2.0 Scope 5

3.0 Definitions 6

4.0 Implementation Model 8

4.0.1 Application Data Flow Diagram 8
4.0.2 Verification 10
4.0.3 DICOM Store 10
4.0.4 DICOM Print 11
4.0.5 Patient Registration using Worklist 12
4.0.6 Modality Performed Procedure Step 15
4.0.7 Removable Media Storage 15
4.0.8 Storage Commitment 16

4.1 AE Functional Definition 16
4.1.1 Verification Real-World Activities 16
4.1.2 Store Real-World Activities 16
4.1.3 Storage Commitment - Push Model Real-World Activities 16
4.1.4 Print Real-World Activities 17

4.2 Modality Worklist Real-World Activities 17

4.3 Modality Performed Procedure Step Real-World Activities 17

4.4 Removable Media Storage Real-World Activities 17

4.5 Sequencing of Real-World Activities 18

5.0 AE Specifications 19

5.1 Sonoline X150 AE Specification 19
5.1.1 Association Establishment Policies 19
5.1.2 Association Initiation by Real-World Activities 20

6.0 Removable Media Interchange Specifications 51

6.1 Supported Application Profiles 51

6.2 Supported SOP Classes 51

6.2.1 Supported SOP Classes and Transfer Syntaxes 51

6.3 Information Object Definition and DICOMDIR Keys 52

6.3.1 DICOM File Meta Information 52

6.3.2 Basic Directory Information Object Definitions - File-set Identification Module 53

6.3.3 Basic Directory Information Object Definitions - Directory Identification Module 53

6.3.4 Physical Storage Media and Media Formats 53

7.0 Communication Profiles 54

7.1 TCP/IP Stack Supported 54

7.1.1 Physical Media Supported 54

7.1.2 Chapter Extensions/Specializations/Privatizations 54

8.0 Configuration 55

8.1 General System Configuration 55

8.1.1 Hospital Name 55

8.2 DICOM Network Configuration 55

8.2.1 Local 55

8.2.2 Remote 56

8.3 External Equipment Configuration 59

8.4 Support of Extended Character Sets 59

9.0 Security 60

9.1 Security Profiles 60

9.2 Association Level Security 60

9.3 Application Level Security 60

9.4 Virus Protection 60

10.0 Appendix A: Mapping for Obstetric DICOM SR 61

1.0 Purpose

This document describes the conformance to the ACR-NEMA DICOM 3.0 Standard by the Sonoline X150 ultrasound system software version 1.0 from Siemens Medical Solutions USA, Inc. Ultrasound Division. It shall establish the conformance specifications for this system only, and does not apply to other products offered by Siemens Medical Solutions USA, Inc., or its affiliates.

The Sonoline X150 system is a device that generates ultrasound images that can be sent using DICOM standard protocols and definitions to other DICOM compliant devices that support SOP classes as defined in Table 2 in this document.

2.0 Scope

The DICOM standard provides a well-defined set of structures and protocols that allow inter-operability to a wide variety of medical imaging devices.

When configured with the DICOM option, the Sonoline X150 system provides support for essential services related to ultrasound scanning and connectivity to DICOM compliant devices. Sonoline X150 system products will not support all features supported by the DICOM standard. This document clearly states the DICOM services and data classes that are supported by the applications included with the Sonoline X150. The intent of this document is to allow users and other vendors who also conform to the DICOM standard to exchange information within the specific context of those elements of the DICOM standard that Sonoline X150 system supports.

This document is written with respect to the adopted portions of the DICOM standard, Revision 3. The following sections of this document follow the outline specified in the DICOM Standard NEMA publication PS3.2.[1]

1 Second part of the DICOM standard: NEMA Standards Publication PS 3.2-2003, Digital Imaging and Communications in Medicine (DICOM), Part 2: Conformance

3.0 Definitions

The following table provides a list of terms, their acronyms (if applicable), and their descriptions.

Table 1 Terms, Acronyms, and Descriptions.

Term	Acronym	Description
American College of Radiology - National Electrical Manufacturer's Association	ACR-NEMA	The American College of Radiology (ACR) and the National Electrical Manufacturers Association (NEMA) formed a joint committee to develop a standard for Digital Imaging and Communications in Medicine (DICOM).
Application Entity	AE	An application that supports DICOM communication with other DICOM applications.
DICOM Conformance Statement	DCS	A formal statement associated with a specific implementation of the DICOM Standard. It specifies the Service Classes, Information Objects, Communications Protocols and Media Storage Application Profiles supported by the implementation.
DICOM Message Service Element	DIMSE	Defines an Application Service Element (both the service and protocol) used by peer DICOM Application Entities for the purpose of exchanging medical images and related information.
Digital Imaging and Communications in Medicine, Version 3.0	DICOM 3.0	A well-defined set of structures and protocols that allow inter-operability to a wide variety of medical imaging devices.
Ethernet	-	Network methodology devised in 1976 by Digital Equipment Corporation, Intel and Xerox which is the most common in practice today. Ethernet is the IEEE standard 802.3
Information Object Definition	IOD	A data abstraction of a class of similar Real-World Objects which defines the nature and attributes relevant to the class of Real-World objects represented.
Integrating the Healthcare Enterprise	IHE	An initiative sponsored by the Radiological Society of North America (RSNA) to document and demonstrate standards-based methods of sharing information in support of optimal patient care. For additional information see www.rsna.org/ihe.
Picture Archiving and Communications Systems	PACS	A DICOM server that accepts medical images from another DICOM system and stores the images for later retrieval.
Protocol Data Unit	PDU	The PDUs are message formats exchanged between peer entities within a layer. A PDU shall consist of protocol control information and user data.

Table 1 Terms, Acronyms, and Descriptions. (Continued)

Term	Acronym	Description
Real-World Activity	RWA	That which exists in the real world which pertains to specific area of information processing within the area of interest of the DICOM Standard. Such a Real-World Activity may be represented by one or more computer information metaphors called SOP Classes.
Request	RQ	A request from one DICOM AE for service from another DICOM AE
Response	RSP	A response from one DICOM AE to the request for service from another DICOM AE
Service Class Provider	SCP	The role played by a DICOM Application Entity (DIMSE-Service-User) which performs operations and invokes notifications on a specific Association.
Service Class User	SCU	The role played by a DICOM Application Entity (DIMSE-Service-User) which invokes notifications and performs operations on a specific Association.
Service-Object Pairs	SOP	The union of a specific set of DIMSE Services and one related Information Object Definition which completely defines a precise context for communication.
Structured Report	SR	Also called Procedure Report. A DICOM object which contains measurement, calculations, diagnoses, image references and other information concerning a patient exam.
Unique identifier	UID	A series of digits and periods (.) used to uniquely identify an object such as an Ultrasound image in DICOM.
VA Hospital Information System Technology Architecture DICOM Conformance Requirements	VISTA	DICOM requirements document of the US Department of Veteran's Affairs (VA) Hospital Information System Technology Architecture. For additional information see www.va.gov/imaging.

4.0 Implementation Model

Sonoline X150 system users can store images and other data directly on the Sonoline X150 system hard disk. Images and structured reports can be exported to a DICOM archive server or workstation on a network. In the following sections, Sonoline X150 system Real World Activities are indicated by “Real World Activity” name while “X150 AE” indicates the invoked Application Entity. Similarly, the activities associated with service providers are indicated as “Real World Service Activity.”

4.0.1 Application Data Flow Diagram

Figure 1 illustrates the Sonoline X150 system’s Application Entity (AE), which is shown in the box. Relationships between user invoked activities (in the circles at the left of the AE) and the associated real-world activities provided by DICOM service providers (in the circles on the right side of the diagram) are shown.

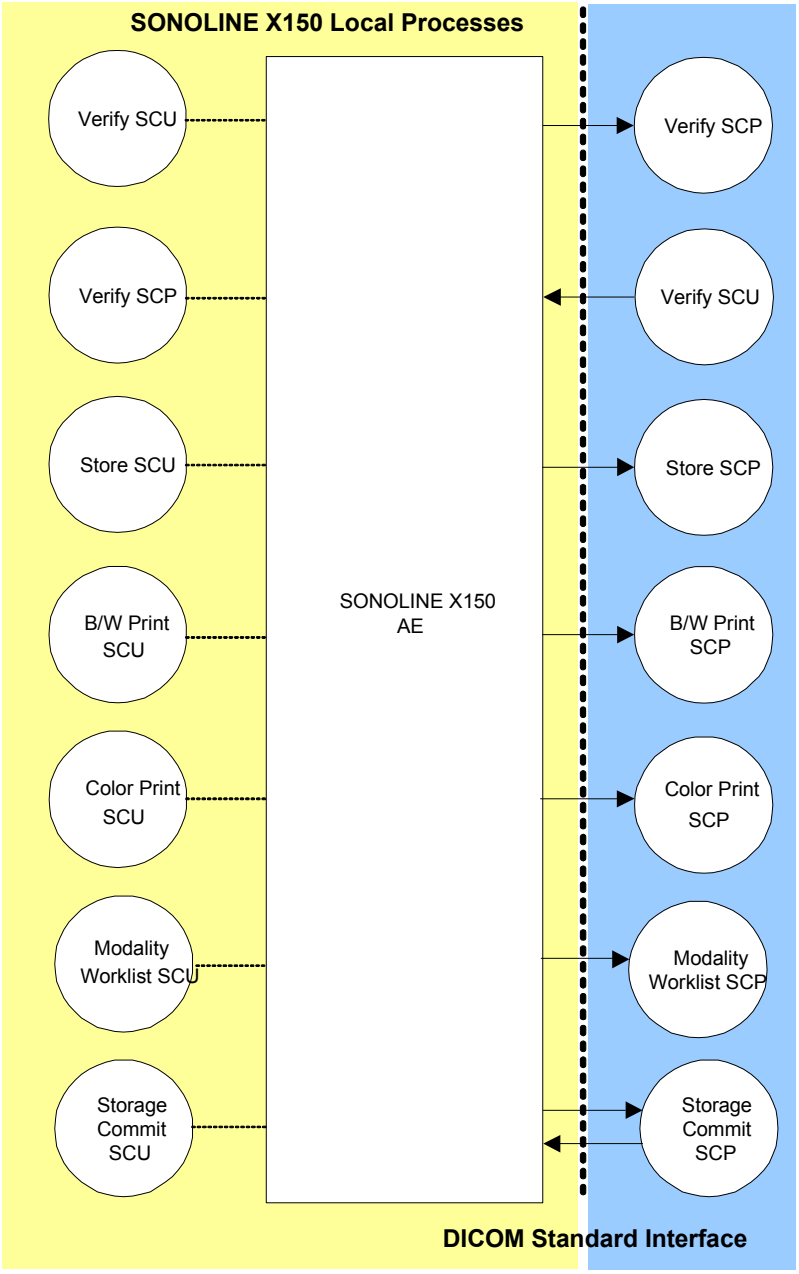


Figure 1 Implementation Model

4.0.2 Verification

Verification is a part of the DICOM configuration located on the 'DICOM' page of the System Presets. Verification can be used to send a DICOM Verification request to a remote Application Entity (AE) and listen for a response.

When used as a diagnostic tool, Verification returns the following messages to the user:

- If the verification succeeds: "`DICOM - Successfully contacted system`"
- If the verification fails: "`DICOM - Unable to communicate with system`"

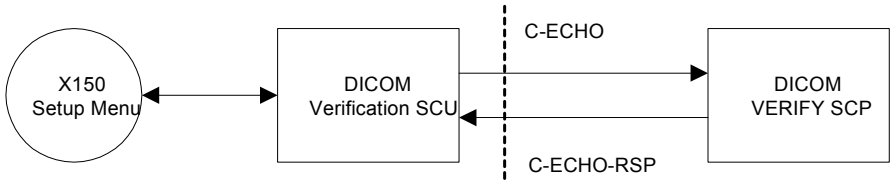


Figure 2 Verification Model.

4.0.3 DICOM Store

When requested the Sonoline X150 sends images and/or structured reports to the preconfigured DICOM Storage server.

DICOM Store can be seen as two sub-operations:

- queueing images and/or structured reports for transfer
- transferring images and/or structured reports to the storage server.

Queueing images and structured reports for transfer:

Sonoline X150 can be configured to automatically queue up images and structured reports for transfer as they are being created. "AutoStore to DICOM" option in DICOM presets has to be set for this.

Alternatively, user can select exams or individual images and manually queue them up from Review mode. When an exam is selected for DICOM store all images and structured reports (generally zero or one) will be queued. Structured reports can't be selected individually for store, the entire exam must be stored.

Transfer of images and structured reports to the storage server:

Further, once images and/or structured reports are queued they may be immediately transferred or delayed till the end of study using the transfer storage configuration.

Sonoline X150 supports two storage configurations: “Store At End of Exam” and “Store During Exam”.

If the storage configuration is set to “Store At End of Exam” transfer attempts begin when the user selects “Close Study” or “New Patient”.

If the storage configuration is set to “Store During Exam”, transfer attempts to destination devices begin immediately after they are queued.

For both “Store At End of Exam” and “Store During Exam” settings, image and/or structured report transfer will be delayed if the Sonoline X150 is busy performing another DICOM Store operation.

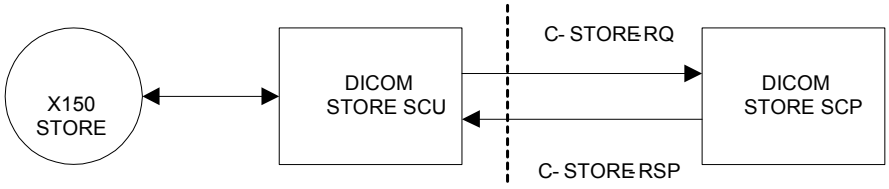


Figure 3 Store Model.

4.0.4 DICOM Print

Sonoline X150 system is capable of grayscale (B/W) and color printing.

When requested, single frame images will be printed to a pre-configured DICOM network printer. X150

DICOM Print can be seen as two sub-operations:

- paging images for transfer
- transferring pages to printer

Paging images for transfer:

Sonoline X150 can be configured to automatically queue up images to be printed on B/W Printer and/or Color printer as they are being created.

Alternatively, user can select exams or individual images and manually queue them up from Review mode for print.

Every image queued up is added into a page in the respective printer layout (DICOM B/W Printer Layout or DICOM Color Printer Layout).

Transfer of pages to the Printer:

Further, pages may be immediately transferred to the printer or delayed till the end of study based on the transfer configuration.

Sonoline X150 supports two configurations: “Print At End of Exam” and “Print When Page Full”.

If the configuration is set to “Print At End of Exam,” transfer attempts of all pages to the destination DICOM printer begin as a batch when the user ends the exam.

If the configuration is set to “Print When Page Full”, transfer attempt of a page to the destination DICOM printer begins as soon as it becomes full.

For both “Print At End of Exam” and “Print when page full” settings, page transfer will be delayed if the Sonoline X150 is busy performing another DICOM Print operation.

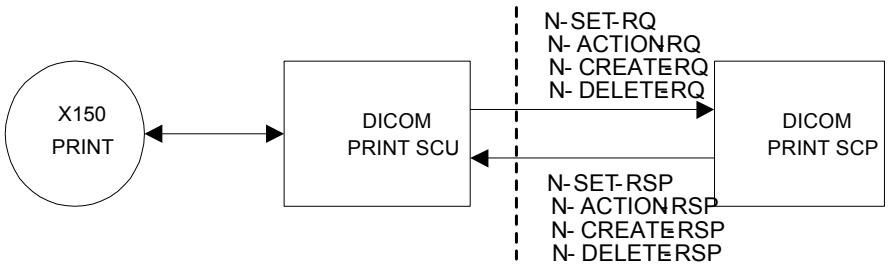


Figure 4 Print Model.

4.0.5 Patient Registration using Worklist

Patient registration can be automated by using the 'Worklist' Real World Activity. Pressing the 'New Patient' key on the keyboard initiates the patient data registration process and closes the previous active study. Pressing the 'Worklist' button on the patient data display screen invokes the Worklist query screen. The Worklist query screen can also can be initiated from the Study screen.

Pressing the 'Search' button will attempt to find all matching patient data using the information entered on the Worklist Query screen. Patient name fields that are partially filled or empty will be treated as though an implicit wildcard was appended at the end of each field. Patient ID, Requested Procedure ID and Accession number will be exact match only. If no matches are found, a message will be presented to the operator indicating so. If more that one matching patient is found, a pick list of patient procedures will be presented to the user to select from. Each of the fields will be sortable in ascending and descending order.

The pick list of patient procedures will be limited to a number of preset entries. If more than this number of matching records are found in the query, the search will terminate and a the user will be notified. The search list criteria will contain:

- Patient name
- Patient ID
- Accession number
- Exam start date/time range
- Requested Procedure ID
- US/All modalities
- Scheduled station AE title

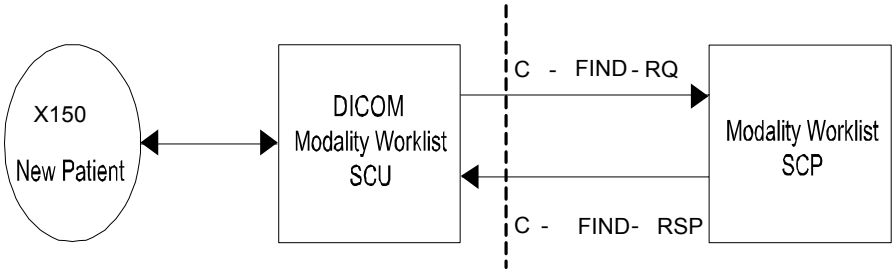


Figure 5 Modality Worklist Model

Once a Worklist query is initiated, the “Retrieving worklist, please wait ...” dialog will be presented to the user. The user will only have one option, “Cancel,” which will abort the query operation.

The following data fields in Modality Worklist Screen are initially populated from the New Patient Screen, if filled in, and can be used for query:

Attribute Name	Tag
Patient’s Full Name	(0010,0010)
Patient ID	(0010,0020)
Accession Number	(0008,0050)

The following data fields will be populated on the worklist screen for each return:

Attribute Name	Tag
Patient's Full Name	(0010,0010)
Patient ID	(0010,0020)
Accession Number	(0008,0050)
Exam Start Date/Time	(0040,0002), (0040,0003)
Scheduled Procedure Step Sequence	(0040,0100)*
>Scheduled Procedure Step Description	(0040,0007)
>Scheduled Protocol Code Sequence	(0040,0008)
>>Code Value	(0008,0100)
Requested Procedure Description	(0032,1060)
Exam Type	(0008,1030)**
*<code1>, …,<codeN>: <sched1>,…,<schedn> where: code<i> = Sequence item code value(0008,0100) for a given sequence or value multiplicity sched<i> = Scheduled procedure step(0040,0007) for a given sequence or value multiplicity	
**if a value exists for (0008,1030). Otherwise, Exam Type is set to value of Scheduled procedure step (0040,0007). If (0040,0007) is also empty, Exam Type is set to Requested procedure Description (0032,1060) if it exists.	

The user will have the option to select a patient procedure step, or cancel the operation. Selection of a procedure step from the list will cause demographic information for the patient to be loaded in to the patient data fields.

The following data fields will be populated on the patient data screen:

Attribute Name	Tag
Patient Name (last, first, middle, prefix, suffix)	(0010,0010)
Patient ID	(0010,0020)
Accession number	(0008,0050)
Exam start date/time	(0040,0002), (0040,0003)
DOB	(0010,0030)
Sex	(0010,0040)
Weight	(0010,1030)
Height	(0010,1020)

Attribute Name	Tag
Physician	(0008,0090)
Indication	(0080,1080)
LMP	(0010,21D0)

4.0.6 Modality Performed Procedure Step

The Sonoline X150 System supports reporting of Modality Performed Procedure Step (MPPS) orders when the patient registration process utilizes the ‘Worklist’ Real World Activity. Procedure steps are presented to the operator after successful query of a server that supports the MPPS option. A detail window allows the operator access to individual scheduled procedure steps. Pressing the ‘Procedures’ push button on the Review Screen actualizes the detail window when multiple procedure steps are listed for the patient.

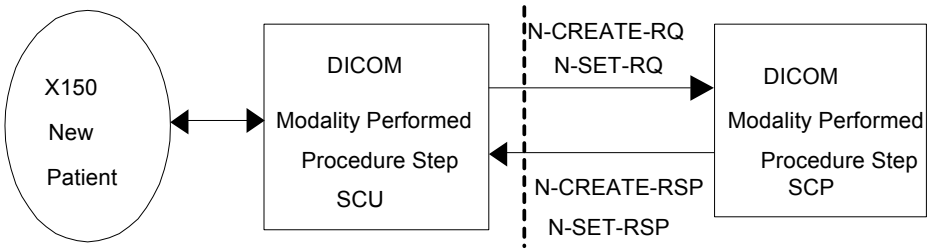


Figure 6 MPPS Model

4.0.7 Removable Media Storage

The Sonoline X150 can perform DICOM operations to its standard on-board 120mm CD disk drive.

The Sonoline X150 performs the File Set Creator and File Set Reader Roles for CD disks. The File Set Reader functionality does not support import of DICOM Structured Reports or measurements of imported images. Both limitations are overcome when DICOM and TIFF format is exported to CD. A DICOM conforming CD media is created when the user saves studies in DICOM format to the CD. A DICOM 3.0 conforming DICOMDIR file is created together with the directory structures, image files and structured reports (if any exist).

4.0.8 Storage Commitment

The user can exercise the Storage Commitment option by configuring and selecting a Storage Commitment server from the DICOM Presets menu. The Sonoline X150 system requests commitment of images and structured reports (if any exist) and upon successful acknowledgment from the Storage server marks the study on the system hard drive as ‘Archived’.

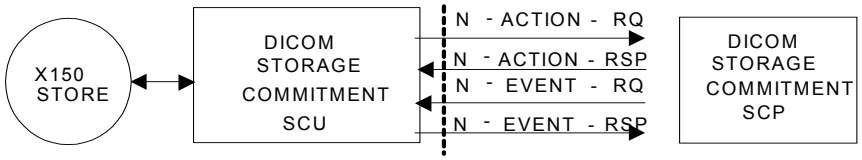


Figure 7 Storage Commitment Model

4.1 AE Functional Definition

4.1.1 Verification Real-World Activities

The Sonoline X150 application entity performs Verification Service Class as an SCU and SCP allowing the operator to verify the ability of an application on a remote device to receive DICOM messages and allowing the operator of a remote DICOM device to verify the Sonoline X150 system’s ability to receive DICOM messages. (C-ECHO DIMSE)

4.1.2 Store Real-World Activities

The Sonoline X150 Application Entity (AE) performs all of the functions to transmit ultrasound images, structured reports and associated data to network servers or workstations. The Sonoline X150 AE supports the Ultrasound Image, Ultrasound Image (Retired) and Secondary Capture storage SOP classes as an SCU.

The Sonoline X150 AE also supports Structured Reports, for Obstetric studies only, using the Comprehensive SR SOP Class as an SCU.

The Sonoline X150 AE initiates an association for C-STORE Requests to store providers when the user invokes “DICOM Store”. The association may be used to store multiple images and structured reports and is closed when no images or structured reports are available to be stored to the remote device for five seconds.

4.1.3 Storage Commitment - Push Model Real-World Activities

The Sonoline X150 AE supports Storage Commitment Push Model SOP class to inform servers when all the store operations for a study have been completed. The Storage Commitment SCU uses the N-ACTION primitive to

request safekeeping of a set of SOP Instances. The Storage Commitment SCU also processes the N-EVENT-REPORT primitives that are received from the SCP indicating ‘successful’ or ‘non-successful’ commitment status. The N-EVENT-REPORT information is used to mark a study as being successfully archived to a DICOM SCP.

The successful commit status and archival indication on the X150 does not ensure permanent archival of the images and Structured Reports. The operations performed by the SCP are dependent on its capabilities and configuration.

4.1.4 Print Real-World Activities

The Sonoline X150 AE provides all aspects of the Print Management SCU. The Sonoline X150 AE initiates an association to the printer when the user invokes “DICOM Print”. The association may be used to print multiple pages and is closed when no pages are available to be printed to the remote device for five seconds.

4.2 Modality Worklist Real-World Activities

The Sonoline X150 AE supports the DICOM Basic Worklist Management Service as an SCU. The AE initiates an association to the active Worklist server when a Worklist query is selected (via the “Worklist” button). The association is closed upon the completion of each query. A preset maximum number of matching results is accepted, at which point, the Sonoline X150 AE issues a C-CANCEL-RQ request.

4.3 Modality Performed Procedure Step Real-World Activities

The Sonoline X150 AE supports Modality Performed Procedure Step (MPPS) in the role of SCU. The Sonoline X150 is capable of displaying scheduled procedure steps via the User Interface (UI) for Modality Performed Procedure Step. The operator can select a single PPS. The operator can notify the MPPS server that a MPPS is ‘In Progress’, ‘Discontinued’ or ‘Completed’.

4.4 Removable Media Storage Real-World Activities

The Sonoline X150 AE provides a standard implementation of DICOM Store to CD. The Sonoline X150 AE selects one or more studies and exports the same to CD. Sonoline X150 AE creates a DICOM File Format Image File for every image and structured report in each of the selected studies.

A DICOMDIR file is created along with the files.

Measurements are not supported on imported images unless TIFF format is exported.

The DICOM SR cannot be imported from media unless the TIFF format is exported along with the DICOM SR.

4.5 Sequencing of Real-World Activities

Print, Store, Echo, Worklist, Storage Commit and MPPS commands can be transmitted simultaneously within the limits described below.

Storage Commit

The Storage Commitment (if enabled) command is sent in the following situations:

a. On series close, when all images have previously stored successfully.

b. The series is closed before all images are stored successfully, all previous stores have succeeded and the last image stores successfully.

c. The series is closed before all images are stored successfully, at least one store has succeeded, at least one store has failed and the last store with non-zero retry count fails or succeeds.

d. A series has been partially committed as in c. Later, due to "Retry Job" button press on the Store Status UI screen the store jobs are retried. Another Storage Commit is sent when at least one store has succeeded and the last store with non-zero retry count fails or succeeds.

MPPS

The MPPS (if enabled) command is sent in the following situations:

a. N-CREATE command is sent whenever a new procedure step is selected. The state of the MPPS command is set to “In-Progress”.

b. N-SET command is sent when the Procedure Step is closed by the user pressing either the Completed or Discontinued button on the Close Procedure dialog. The state of the MPPS command is set, according to the state (Completed or Discontinued) set by the user.

5.0 AE Specifications

The following specifications apply to the Sonoline X150 AE as depicted in Figure 1.

5.1 Sonoline X150 AE Specification

The Sonoline X150 AE provides conformance to the following DICOM Service SOP Classes as an SCU.

Table 2 Supported SOP Classes.

Service SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Storage Commitment - Push Model	1.2.840.10008.1.20.1
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1
Printer SOP Class	1.2.840.10008.5.1.1.16
Modality Worklist Information Model C- FIND	1.2.840.10008.5.1.4.31
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33

5.1.1 Association Establishment Policies

5.1.1.1 General

The Sonoline X150 system utilizes TCP/IP. The Maximum Length PDU negotiation is included in all association establishment requests. The maximum length PDU offered for an association initiated by Sonoline X150 is:

- Maximum PDU Offered: 28672

5.1.1.2 Association Establishment Order

Sonoline X150 initiates each C-Store Request one at a time, one for each transfer request being processed.

Image format on Sonoline X150 can be set to one of “Automatic”, “Old Ultrasound” or “Secondary Capture”.

For the “Automatic” setting, Sonoline X150 proposes Ultrasound Image, Secondary Capture Image and Comprehensive SR sequentially.

For the “Old Ultrasound” setting, Sonoline X150 proposes Ultrasound Image (Retired), Secondary Capture and Comprehensive SR Image to be negotiated sequentially.

For the “Secondary Capture” setting, Sonoline X150 proposes Secondary Capture Image and Comprehensive SR to be negotiated sequentially.

5.1.1.3 Asynchronous Nature

All associations use the default synchronous mode of operation. Asynchronous Operations Window negotiations are not supported on the Sonoline X150 system.

5.1.1.4 Implementation Identifying Information

- Implementation Class UID: “1.3.12.2.1107.5.5.5” (See below).
- Implementation Version Name: “MergeCOM3_351MergeCOM3_351”

Siemens has provided registration for all Siemens Medical Solutions Groups. This unique Class UID is defined as:

“1.3.12.2.1107.5.5.product”

Where the interpretation is:

1. = International Standards Organization (ISO)

3. = International branch of ISO

12.2.1107.5. = Assigned to Siemens-UB MED

5. = Ultrasound Modality (SMS-UG)

Product = 5 - DICOM implementation for SONOLINE G20, X150, G50, G60 S and Acuson CV70

5.1.2 Association Initiation by Real-World Activities

5.1.2.1 Real World Activity – Verification

The Sonoline X150 is capable of supporting Verification service class as SCU or SCP. Verification can be initiated as a singular event from the Systems Presets menu to any configured SCP that supports Verification.

Proposed Presentation Contexts – Verification

The Sonoline X150 will propose Presentation contexts as shown in table 3.

Table 3 Verification Presentation Context.

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU/ SCP	None
Verification	1.2.840.10008.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU/ SCP	None
Verification	1.2.840.10008.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU/ SCP	None

5.1.2.2 Real World Activity – Store

Sonoline X150 facilitates users to store images and structured reports as they are being created or later in review mode.

Queueing images during acquisition:

“Autostore to DICOM” option in DICOM presets has to be set. One or more of “Print/Store 1”, “Print/Store 2” keys on the control panel can be configured for Store (Disk Store, D.Store). When the user presses one of the configured keys, an image is acquired, stored on the hard disk and queued up to be transferred to the storage server. Structured reports, if any, will be stored automatically after the study is closed and each time the report is modified after study close.

Queueing images and structured reports in Review mode:

User can select one or more closed studies and queue them up for Storage. The DICOM Store button is available in Review screen for this operation. All images and structured reports (if any) are stored. The study must be closed to generate a structured report.

Transfer of images to the storage server:

See section 4.1.2.

Associated Real World Activities

When images and/or structured reports are transferred from the hard disk to a DICOM Store SCP, the system establishes an association between the Sonoline X150 AE and the configured DICOM device. The association may be used to store multiple images and/or structured reports and is closed when no images or structured reports are available to be stored to the remote device for five seconds.

Proposed Presentation Context

The following Presentation Contexts are presented to the SCP in an A-ASSOCIATE-RQ for DIMSE C-STORE storage services. The storage services utilize C-STORE services, as defined by the DICOM Standard. Table 4 represents all “Store” presentation contexts.

Table 4 Store Presentation Context.

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

The Sonoline X150 system always acts as an SCU for store and is the client in a client-server model.

SOP Specific Conformance to Storage Service SOP Classes

The Store Real World Activity provides standard extended conformance as an SCU for the following standard Storage Service Class SOP:

Table 5 Supported SOP Classes.

Service SOP Class Name	SOP Class UID	Conformance Level
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Standard Extended
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Standard Extended
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Standard Extended
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Standard Extended

This is accomplished using the DIMSE C-STORE Service. The SCU issues a service request with a SOP instance that meets the requirements of the desired ultrasound, secondary capture, or structured report IOD.

The only Structured Report Template supported by the Sonoline X150 is TID 5000 “OB-GYN Ultrasound Procedure Report”.

The following table denotes the attributes included in the Ultrasound Image Object as implemented on the Sonoline X150. Attributes not listed are not used.

Table 6 Ultrasound Image and Ultrasound Retired Image IOD Attributes

Module	Attribute	Tag	Notes
Patient Identification	Patient's Name	(0010,0010)	X150 Patient Data Screen – Last Name, First & Middle fields. Populated from Modality Worklist if used.
	Patient ID	(0010,0020)	X150 Patient Data Screen – ID field. Default is today’s date & time (e.g., 03_04_2003_17_54_43 = Apr. 3, 2003 at 5:54:43 PM). Populated from Modality Worklist if used.
Patient Demographic	Patient's Birth Date	(0010,0030)	X150 Patient Data Screen – DOB field. Default is a zero length attribute. Populated from Modality Worklist if used.
	Patient's Sex	(0010,0040)	X150 Patient Data Screen – Gender field. M = male F = female. O = Other Default is a zero length attribute. Populated from Modality Worklist if used.
	Patient’s Age	(0010,1010)	Calculated from Patient Data Screen DOB field.
	Patient’s Size	(0010,1020)	X150 Patient Data Screen – Height field. Populated from Modality Worklist if used.
	Patient’s Weight	(0010,1030)	X150 Patient Data Screen – Weight field. Populated from Modality Worklist if used.
Patient Study	Admitting Diagnosis Description	(0008,1080)	X150 Patient Data Screen – Indication field. Populated from Modality Worklist if used.
General Study	Study Instance UID	(0020,000D)	Populated from Modality Worklist if used; generated by X150 otherwise
	Study Date	(0008,0020)	Date the exam started.
	Study Time	(0008,0030)	Time the exam started.
	Referring Physician's Name	(0008,0090)	X150 Patient Data Screen – Physician field. Populated from Modality Worklist if used.
	Study ID	(0020,0010)	Generated by X150

Module	Attribute	Tag	Notes
	Accession Number	(0008,0050)	X150 Patient Data Screen – Accession # field. Populated from Modality Worklist if used.
	Study Description	(0008,1030)	Populated with the first attribute from Modality Worklist in this list that contains a valid value: Scheduled Procedure Step Description (0040,0007), Requested Procedure Description (0032,1060), Study Description (0008,1030), Exam Type ("Cardiac", "OB", ...).
General Series	Modality	(0008,0060)	Always set to “US”
	Series Instance UID	(0020,000E)	Generated by X150
	Series Number	(0020,0011)	Series Number in study (1-n).
	Laterality	(0020,0060)	Always sent as 0 length attribute
	[(b)]Series Date	(0008,0021)	Date the series started.
	[(b)]Series Time	(0008,0031)	Time the series started.
	[(b)]Series Description	(0008,103E)	Populated with Scheduled Procedure Step Description if a value was provided by Modality Worklist.
	[(b)]Protocol Name	(0018,1030)	The exam type of the most recent image stored in a particular series. If no images are stored for a series then the value is set to “Ultrasound”.
	[(b)]Request Attributes Sequence	(0040,0275)	Populated with Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>[(b)]Scheduled Procedure Step Description	(0040,0007)	Populated with Scheduled Procedure Step Description (0040,0007) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>[(b)]Scheduled Protocol Code Sequence	(0040,0008)	Populated with Scheduled Protocol Code Sequence (0040,0008) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>[(b)]Scheduled Procedure Step ID	(0040,0009)	Populated with Scheduled Procedure Step ID (0040,0009) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.

Module	Attribute	Tag	Notes
	>[(b)]Requested Procedure ID	(0040,1001)	Populated with Requested Procedure ID (0040,1001) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	[(b)]Performed Procedure Step Start Date	(0040,0244)	Date the Performed Procedure Step was started.
	[(b)]Performed Procedure Step Start Time	(0040,0245)	Time the Performed Procedure Step was started.
	[(b)]Performed Procedure Step ID	(0040,0253)	Populated with Scheduled Procedure Step ID (0040,0009) if provided by Modality Worklist.
	[(b)]Performed Procedure Step Description	(0040,0254)	Populated with Scheduled Procedure Step Description (0040,0007) if provided by Modality Worklist.
	[(b)]Performed Procedure Protocol Code Sequence	(0040,0260)	Populated with Scheduled Protocol Code Sequence (0040,0008) if provided by Modality Worklist.
	[(b)]Comments on the Performed Procedure Step	(0040,0280)	Populated with Comments on the Scheduled Procedure Step (0040,0400) if provided by Modality Worklist.
General Equipment	Manufacturer	(0008,0070)	Set to “Siemens Ultrasound”
	Institution Name	(0008,0080)	X150 System Presets – Organization Name field.
	Software Versions	(0018,1020)	Set to the DICOM Software Version
	Manufacturer’s Model Name	(0008,1090)	Set to “X150”
General Image	Instance Number	(0020,0013)	Image number in study (1 – n)
	Patient Orientation	(0020,0020)	Always sent as 0 length attribute
Image Pixel	Samples per Pixel	(0028,0002)	Set to 3 for RGB images.
	Photometric Interpretation	(0028,0004)	Set to “RGB“
	Planar Configuration	(0028,0006)	Color-by-pixel. Set to 0 for RGB images..
	Rows	(0028,0010)	Set to 480 for NTSC; 547 for PAL. For post-processed images and screen captures, this value may be up to 600.

Module	Attribute	Tag	Notes
	Columns	(0028,0011)	Set to 640 for NTSC; 692 for PAL. For post-processed images and screen captures, this value may be up to 800.
	Bits Allocated	(0028,0100)	Set to 8.
	Bits Stored	(0028,0101)	Set to 8.
	High Bit	(0028,0102)	Set to 7.
	Pixel Representation	(0028,0103)	Set to 0
	Pixel Data	(7FE0, 0010)	
US Image	Image Type	(0008,0008)	Always sent as a 0 length attribute.
	Heart Rate	(0018,1088)	Only provided if heart rate is > 0
	Lossy Image Compression	(0028,2110)	“00”
SOP Common	SOP Class UID	(0008,0016)	1.2.840.10008.5.1.4.1.1.6.1 or 1.2.840.10008.5.1.4.1.1.6
	SOP Instance UID	(0008,0018)	Generated by X150
	Specific Character Set	(0008,0005)	Always set to “ISO_IR 100”
Image Plane	Pixel Spacing	(0028,0030)	Pixel Spacing information is only provided for single, full screen, 2D image types (2D image types are B-mode, B-mode with color, B-mode with power).
Region Calibration	(c)Sequence of Ultrasound Regions	(0018,6011)	
	>(c)Region Spatial Format	(0018,6012)	B-Mode (Tissue or Color) = 0001H M-Mode (Tissue or Color) = 0002H Spectral (CW/PW) Doppler = 0003H
	>(c)Region Data Type	(0018,6014)	B-Mode, M-Mode = 0001H (Tissue) Spectral Doppler = 0004H (CW Spectral Doppler) Spectral Doppler = 0003H (PW Spectral Doppler)
	>(c)Region Flags	(0018,6016)	1st Bit (LSB) = 1 (All images acquired are transparent) 2nd Bit = 1 (All images acquired are automatically scaled) 3rd Bit = 1 for frequency scale 3rd Bit = 0 for velocity scale. The value of the 3rd bit is undefined for any mode other than Doppler. The value for 3rd bit is undefined if both frequency and velocity scales are selected on the Doppler image. 4th Bit is Reserved and value is always 0

Module	Attribute	Tag	Notes
	>[(c)]Region Location Min X0	(0018,6018)	
	>[(c)]Region Location Min Y0	(0018,601A)	
	>[(c)]Region Location Max X1	(0018,601C)	
	>[(c)]Region Location Max Y1	(0018,601E)	
	>[(c)]Physical Units X direction	(0018,6024)	B-Mode (Tissue or Color) = 0003H (cm) M-Mode (Tissue or Color) = 0004H (seconds) Spectral (CW/PW) Doppler = 0004H (seconds)
	>[(c)]Physical Units Y direction	(0018,6026)	B-Mode (Tissue or Color) = 0003H (cm) M-Mode (Tissue or Color) = 0003H (cm) Spectral (CW/PW) Doppler = 0007H (cm/sec)
	>[(c)]Physical Delta X	(0018,602C)	
	>[(c)]Physical Delta Y	(0018,602E)	
	>[(c)]Reference Pixel X0	(0018,6020)	Attribute only set for Spectral Doppler Regions
	>[(c)]Reference Pixel Y0	(0018,6022)	Attribute only set for Spectral Doppler Regions
	>[(c)]Reference Pixel Physical Value X	(0018,6028)	Attribute only set for Spectral Doppler Regions When provided, value is always 0.
	>[(c)]Reference Pixel Physical Value Y	(0018,602A)	Attribute only set for Spectral Doppler Regions When provided, value is always 0.
Private Attributes	[(a)]Private Creator	(0011,0010)	Reserves tags 0011,1000 through 0011,10FF for use as private tags.
	[(a)]Siemens Medical Solutions Model Name	(0011,1010)	Always set to “X150”.
	[(a)]DIMAQ Software Version	(0011,1011)	Set to version of DIMAQ software installed.
	[(a)]Private Data	(0011,1020)	For internal X150 use only.
	[(a)]Private Data	(0011,1021)	For internal X150 use only.
	[(a)]Private Creator	(0013,0010)	Reserves tags 0013,1000 through 0013,10FF for use as private tags.

Module	Attribute	Tag	Notes
	[a]Siemens Medical Solutions Model Name	(0013,1010)	Always set to “X150”.
	[a]DIMAQ Software Version	(0013,1011)	Set to version of DIMAQ software installed.
	[a]Private Data	(0013,1020)	For internal X150 use only.
	[a]Private Creator	(0015,0010)	This group is populated only if data is available. Reserves tags 0015,1000 through 0015,10FF for use as private tags.
	[a]Siemens Medical Solutions Model Name	(0015,1010)	Always set to “X150”.
	[a]DIMAQ Software Version	(0015,1011)	Set to version of DIMAQ software installed.
	[a]Private Data	(0015,1020)	For internal X150 use only.
	[a]Private Creator	(0017,0010)	This group is populated only if data is available. Reserves tags 0017,1000 through 0017,10FF for use as private tags.
	[a]Siemens Medical Solutions Model Name	(0017,1010)	Always set to “X150”.
	[a]DIMAQ Software Version	(0017,1011)	Set to version of DIMAQ software installed.
	[a]Private Data	(0017,1020)	For internal X150 use only.
	Private Creator	(0019,0010)	Reserves tags 0019,1000 through 0019,10FF for use as private tags.
	Import Structured Reports	(0019,1020)	Set to “O” if Obstetric SR options was purchased and SR generation was configured. Otherwise set to “No”. Instructs SCP that it should attempt to import Obstetric measurements from SR.

[a]The Attribute is only provided if the image is written to media.

[b]The Attribute is only provided if the procedure step is queried from the MWL server.

[c]Region Calibration is provided only for 2D (B-Mode), M-Mode and Spectral Doppler Regions. Region Calibration is not supported on Ultrasound RETIRED images, Screen Captures and post-processed images. Region Calibration is not supported for M-Mode or Spectral Doppler still images taken from Live Imaging.

Table 7 Secondary Capture Image IOD Attributes

Module	Attribute	Tag	Notes
Patient Identification	Patient's Name	(0010,0010)	X150 Patient Data Screen – Last Name, First & Middle fields. Populated from Modality Worklist if used.
	Patient ID	(0010,0020)	X150 Patient Data Screen – ID field. Default is today's date & time (e.g., 03_04_2003_17_54_43 = Apr. 3, 2003 at 5:54:43 PM). Populated from Modality Worklist if used.
Patient Demographic	Patient's Birth Date	(0010,0030)	X150 Patient Data Screen – DOB field. Default is a zero length attribute. Populated from Modality Worklist if used.
	Patient's Sex	(0010,0040)	X150 Patient Data Screen – Gender field. M = male F = female. O= Other Default is a zero length attribute. Populated from Modality Worklist if used.
	Patient's Age	(0010,1010)	Calculated from Patient Data Screen DOB field.
	Patient's Size	(0010,1020)	X150 Patient Data Screen – Height field. Populated from Modality Worklist if used.
	Patient's Weight	(0010,1030)	X150 Patient Data Screen – Weight field. Populated from Modality Worklist if used.
Patient Study	Admitting Diagnosis Description	(0008,1080)	X150 Patient Data Screen – Indication field. Populated from Modality Worklist if used.
General Study	Study Instance UID	(0020,000D)	Populated from Modality Worklist if used; generated by X150 otherwise.
	Study Date	(0008,0020)	Date the exam started.
	Study Time	(0008,0030)	Time the exam started.
	Referring Physician's Name	(0008,0090)	X150 Patient Data Screen – Physician field. Populated from Modality Worklist if used.
	Study ID	(0020,0010)	Generated by X150
	Accession Number	(0008,0050)	X150 Patient Data Screen – Accession # field. Populated from Modality Worklist if used.

Module	Attribute	Tag	Notes
	Study Description	(0008,1030)	Populated with the first attribute from Modality Worklist in this list that contains a valid value: Scheduled Procedure Step Description (0040,0007), Requested Procedure Description (0032,1060), Study Description (0008,1030), Exam Type ("Cardiac", "OB", ...).
General Series	Modality	(0008,0060)	Always set to “US”
	Series Instance UID	(0020,000E)	Generated by X150
	Series Number	(0020,0011)	Series Number in study (1-n).
	Laterality	(0020,0060)	Always sent as 0 length attribute
	(b)Series Date	(0008,0021)	Date the series started.
	(b)Series Time	(0008,0031)	Time the series started.
	(b)Series Description	(0008,103E)	Populated with Scheduled Procedure Step Description if a value was provided by Modality Worklist.
	(b)Protocol Name	(0018,1030)	The exam type of the most recent image stored in a particular series. If no images are stored for a series then the value is set to “Ultrasound”.
	(b)Request Attributes Sequence	(0040,0275)	Populated with Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>(b)Scheduled Procedure Step Description	(0040,0007)	Populated with Scheduled Procedure Step Description (0040,0007) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>(b)Scheduled Protocol Code Sequence	(0040,0008)	Populated with Scheduled Protocol Code Sequence (0040,0008) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>(b)Scheduled Procedure Step ID	(0040,0009)	Populated with Scheduled Procedure Step ID (0040,0009) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.
	>(b)Requested Procedure ID	(0040,1001)	Populated with Requested Procedure ID (0040,1001) from Scheduled Procedure Step Sequence (0040,0100) if provided by Modality Worklist.

Module	Attribute	Tag	Notes
	[(b)]Performed Procedure Step Start Date	(0040,0244)	Date the Performed Procedure Step was started.
	[(b)]Performed Procedure Step Start Time	(0040,0245)	Time the Performed Procedure Step was started.
	[(b)]Performed Procedure Step ID	(0040,0253)	Populated with Scheduled Procedure Step ID (0040,0009) if provided by Modality Worklist.
	[(b)]Performed Procedure Step Description	(0040,0254)	Populated with Scheduled Procedure Step Description (0040,0007) if provided by Modality Worklist.
	[(b)]Performed Procedure Protocol Code Sequence	(0040,0260)	Populated with Scheduled Protocol Code Sequence (0040,0008) if provided by Modality Worklist.
	[(b)]Comments on the Performed Procedure Step	(0040,0280)	Populated with Comments on the Scheduled Procedure Step (0040,0400) if provided by Modality Worklist.
SC Equipment Module	Conversion Type	(0008,0064)	Set to “WSD”
General Equipment	Manufacturer	(0008,0070)	Set to “Siemens Ultrasound”
	Institution Name	(0008,0080)	X150 System Presets – Organization Name field.
	Software Versions	(0018,1020)	Set to the DICOM Software Version
	Manufacturer’s Model Name	(0008,1090)	Set to “X150”.
General Image	Instance Number	(0020,0013)	Image number in study (1 – n)
	Patient Orientation	(0020,0020)	Always sent as 0 length attribute.
Image Pixel	Samples per Pixel	(0028,0002)	Set to 3 for RGB images.
	Photometric Interpretation	(0028,0004)	“RGB”
	Planar Configuration	(0028,0006)	Color-by-pixel. Set to 0 for RGB images.
	Rows	(0028,0010)	Set to 480
	Columns	(0028,0011)	Set to 640
	Bits Allocated	(0028,0100)	Set to 8.
	Bits Stored	(0028,0101)	Set to 8.
	High Bit	(0028,0102)	Set to 7.
	Pixel Representation	(0028,0103)	Set to 0.

Module	Attribute	Tag	Notes
	Pixel Data	(7FE0,0010)	
SOP Common	SOP Class UID	(0008,0016)	1.2.840.10008.5.1.4.1.1.7
	SOP Instance UID	(0008,0018)	Generated by X150
	Specific Character Set	(0008,0005)	Always set to “ISO_IR 100”
Private Attributes	[(a)]Private Creator	(0011,0010)	Reserves tags 0011,1000 through 0011,10FF for use as private tags.
	[(a)]Siemens Medical Solutions Model Name	(0011,1010)	Always set to “X150”.
	[(a)]DIMAQ Software Version	(0011,1011)	Set to version of DIMAQ software installed.
	[(a)]Private Data	(0011,1020)	For internal X150 use only.
	[(a)]Private Data	(0011,1021)	For internal X150 use only.
	[(a)]Private Creator	(0013,0010)	Reserves tags 0013,1000 through 0013,10FF for use as private tags.
	[(a)]Siemens Medical Solutions Model Name	(0013,1010)	Always set to “X150”.
	[(a)]DIMAQ Software Version	(0013,1011)	Set to version of DIMAQ software installed.
	[(a)]Private Data	(0013,1020)	For internal X150 use only.
	[(a)]Private Creator	(0015,0010)	This group is populated only if data is available. Reserves tags 0015,1000 through 0015,10FF for use as private tags.
	[(a)]Siemens Medical Solutions Model Name	(0015,1010)	Always set to “X150”.
	[(a)]DIMAQ Software Version	(0015,1011)	Set to version of DIMAQ software installed.
	[(a)]Private Data	(0015,1020)	For internal X150 use only.
	[(a)]Private Creator	(0017,0010)	This group is populated only if data is available. Reserves tags 0017,1000 through 0017,10FF for use as private tags.
	[(a)]Siemens Medical Solutions Model Name	(0017,1010)	Always set to “X150”.

Module	Attribute	Tag	Notes
	[a]DIMAQ Software Version	(0017,1011)	Set to version of DIMAQ software installed.
	[a]Private Data	(0017,1020)	For internal X150 use only.
	Private Creator	(0019,0010)	Reserves tags 0019,1000 through 0019,10FF for use as private tags.
	Import Structured Reports	(0019,1020)	Set to “O” if Obstetric SR options was purchased and SR generation was configured. Otherwise set to “No”. Instructs SCP that it should attempt to import Obstetric measurements from SR.

[a]The Attribute is only provided if the image is written to media.

[b]The Attribute is only provided if the procedure step is queried from the MWL server.

The following table denotes the attributes included in the Comprehensive SR Object as implemented on the Sonoline X150. Attributes not listed are not used.

Table 8 Comprehensive SR IOD Attributes

Module	Attribute	Tag	Notes
Patient	Patient's Name	(0010,0010)	X150 Patient Data Screen – Last Name, First & Middle fields. Populated from Modality Worklist if used.
	Patient ID	(0010,0020)	X150 Patient Data Screen – ID field. Default is today’s date & time (e.g., 03_04_2003_17_54_43 = Apr. 3, 2003 at 5:54:43 PM). Populated from Modality Worklist if used.
	Patient's Birth Date	(0010,0030)	X150 Patient Data Screen – DOB field. Default is a zero length attribute. Populated from Modality Worklist if used.
	Patient's Sex	(0010,0040)	X150 Patient Data Screen – Gender field. M = male F = female. O = Other Default is a zero length attribute. Populated from Modality Worklist if used.
	Patient’s Size	(0010,1020)	X150 Patient Data Screen – Height field. Populated from Modality Worklist if used.

Module	Attribute	Tag	Notes
	Patient's Weight	(0010,1030)	X150 Patient Data Screen – Weight field. Populated from Modality Worklist if used.
Patient Study	Admitting Diagnosis Description	(0008,1080)	X150 Patient Data Screen – Indication field. Populated from Modality Worklist if used.
General Study	Study Instance UID	(0020,000D)	Populated from Modality Worklist if used; generated by X150 otherwise
	Study Date	(0008,0020)	Date the exam started.
	Study Time	(0008,0030)	Time the exam started.
	Referring Physician's Name	(0008,0090)	X150 Patient Data Screen – Physician field. Populated from Modality Worklist if used.
	Study ID	(0020,0010)	Generated by X150
	Accession Number	(0008,0050)	X150 Patient Data Screen – Accession # field. Populated from Modality Worklist if used.
	Study Description	(0008,1030)	Populated with the first attribute from Modality Worklist in this list that contains a valid value: Scheduled Procedure Step Description (0040,0007), Requested Procedure Description (0032,1060), Study Description (0008,1030), Exam Type ("Cardiac", "OB", ...).
SR Document Series	Modality	(0008,0060)	Always set to "SR"
	Series Instance UID	(0020,000E)	Generated by X150
	Series Number	(0020,0011)	Series Number in study (2-n).
	Series Date	(0008,0021)	Date the series started.
	Series Time	(0008,0031)	Time the series started.
	Referenced Performed Procedure Step Sequence	(0008,1111)	Populated with MPPS SOP Class UID and MPPS SOP instance UID of MPPS command sent for the procedure step(s) performed.
General Equipment	Manufacturer	(0008,0070)	Set to "Siemens Ultrasound"
	Institution Name	(0008,0080)	X150 System Presets – Organization Name field.
	Software Versions	(0018,1020)	Set to the DICOM Software Version
	Manufacturer's Model Name	(0008,1090)	Set to "X150"
SR Document General	Content Date	(0008,0023)	Date the report was created
	Content Time	(0008,0033)	Time the report was created

Module	Attribute	Tag	Notes
	Instance Number	(0020,0013)	Always set to 0.
	Completion Flag	(0040,A491)	Always set to “PARTIAL”
	Verification Flag	(0040,A493)	Always set to “UNVERIFIED”
	Predecessor Documents Sequence	(0040,A360)	Supplied if a previous SR was generated for the study. Populated with SOP Class UID and SOP Instance UID of the previous Obstetric SRs for the study, if any. See table C17-2 in PS 3.3-2004 for sequence definition.
	Performed Procedure Code Sequence	(0040,A372)	Populated with contents of Procedure Code Sequence from Modality Worklist if available, empty otherwise. See table C17-2 in PS 3.3-2004 for sequence definition.
	Current Requested Procedure Evidence Sequence	(0040,A375)	Lists all images in the study. See table C17-2 in PS 3.3-2004 for sequence definition.
SOP Common	SOP Class UID	(0008,0016)	1.2.840.10008.5.1.4.1.1.88.33
	SOP Instance UID	(0008,0018)	Generated by X150.
	Specific Character Set	(0008,0005)	Always set to “ISO_IR 100”.
	Instance Creation Date	(0008,0012)	Date the SOP Instance was created.
	Instance Creation Time	(0008,0013)	Time the SOP Instance was created.
	Instance Creator UID	(0008,0014)	
Private Attributes	Private Creator	(0019,0010)	Reserves tags 0019,1000 through 0019,10FF for use as private tags.
	Import Structured Reports	(0019,1020)	Set to “O” if Obstetric SR options was purchased and SR generation was configured. Otherwise set to “No”. Instructs SCP that it should attempt to import Obstetric measurements from SR.

Error Handling

The following table indicates the response status codes that are handled by the Sonoline X150 AE, which a SCP may return following the SCU’s C-STORE-RSP command.

A successful C-STORE operation will allow the Sonoline X150 AE to continue to the next action desired by the user.

Table 9 C-STORE Status Responses.

Service Status	Further Meaning	Protocol Codes	Related Fields
Refused	Out of resources.	A7xx	None
Error	Data set does not match SOP Class.	A9xx	None
	Cannot understand.	Cxxx	
Warning	Coercion of data Elements.	B000	None
	Data set does not match SOP Class.	B007	
	Elements discarded.	B006	
Success		0000	None

If the C-STORE operation is not successful, the image(s) and Structured Report(s), if any, are spooled on the Sonoline X150 hard drive. A user-configured number of additional attempts are made to store the image(s) and Structured Report(s). If these attempts fail, the user must select the job and press “Retry Job” on the Store Status page to complete the C-STORE operation.

All image and Structured Report storage on the Sonoline X150 system hard drive is temporary in nature. If an attempt is made to store images on a full Sonoline X150 system hard drive, the system will attempt to delete studies archived to CD or DICOM. If no deleteable data exists, a “DISK FULL” message is displayed on the Sonoline X150 system display. The user must then delete studies not archived in order to store additional images.

5.1.2.3 Real World Activity - Print

Sonoline X150 facilitates user to print images as they are being created or later in review mode.

Paging images during acquisition

One or more of “Print/Store 1” and “Print/Store 2” keys on the control panel can be configured for Print (DICOM B/W Print and/or DICOM Color Print). When the user presses one of the configured keys on the control panel, the image is acquired, stored on the hard disk and placed in a page under the respective printer layout (DICOM B/W Printer Layout or DICOM Color Printer Layout).

Paging images in Review mode

User can select either individual images from open or closed studies, or one or more closed studies and queue them up for print. DICOM B/W Printer and DICOM Color Printer buttons are available in Review screen for this operation. When a study is selected for print, all single-frame images belonging to the study will be printed.

Transfer of pages to the Printer

Pages may be immediately transferred or delayed till the end of study using the transfer configuration.

Sonoline X150 supports two configurations: “Print At End of Exam” and “Print When Page Is Full”.

If the configuration is set to “Print At End of Exam”, all pages queued to destination devices will be transferred as a batch when the user selects “Close Study” or “New Patient”.

If the configuration is set to “Print When Page Is Full”, a page is transferred to destination devices immediately after it is full.

For both “Print At End of Exam”, and “Print When Page Is Full” settings, image transfer will be delayed if the Sonoline X150 is busy performing another DICOM Command (Store/Print/Echo).

Associated Real World Activities

An association is established when the user initiates a “B/W Print” or “Color Print” operation from the Review screen. Individual images or entire exams can be transferred to the selected DICOM Print device. The association is closed no pages are available to be printed for five seconds. An association may also be opened after a network outage or when the system is powered-on if images are queued to be printed.

Proposed Presentation Context to a Grayscale Print Server

Table 10 Grayscale Print Presentation Context.

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	**UID**	**Name List**	**UID List**		
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

SOP Specific Conformance to Basic Grayscale Print Management Meta SOP Class

The Sonoline X150 AE provides standard conformance of the Grayscale Meta SOP classes as an SCU. Specifically, with respect to the Basic Grayscale Print Management Meta SOP Class this means conformance to the underlying SOP classes:

Table 11 Conformance to Grayscale Print Meta SOP Class.

SOP Class Name	SOP Class UID	Conformance Level
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Standard
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Standard
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Standard
Printer SOP Class	1.2.840.10008.5.1.1.16	Standard

All mandatory elements of these classes are supported.

Specific Conformance to Basic Film Session SOP Class

DICOM specified usage - M = Mandatory; U = User Option

Table 12 Supported DIMSE Services for Basic Film Session SOP Class.

Name	Usage	Description
N-Create	M	Creates the Film Session.
N-Set	U	Not used.
N-Delete	U	Deletes the Film Session.
N-Action	U	Not used.

SOP Specific Conformance to Basic Film Box SOP Class

Table 13 Supported DIMSE Services for Basic Film Box SOP Class.

Name	Usage	Description
N-Create	M	Creates the Film Box.
N-Set	U	Not used.
N-Delete	U	Deletes the Film Box. Issued after each film is printed.
N-Action	M	PRINT. Sent after each Film Box is filled, and at the end of the exam to force a print of partially filled Film Box.

Table 14 Attributes set for the Basic Film Box SOP Class.

Attribute Name	Attribute Tag	Usage	Range	Description
Image Display Format	(2010,0010)	M	STANDARD\ X,Y	Where X, Y can be configured/ selected as 1*1, 1*2, 2*2, 2*3, 3*2, 3*3, 3*5, 4*5, 4*6, 5*6
Film Orientation	(2010,0040)	U	PORTRAIT LANDSCAPE	Range may be limited by print server/printer.
Film Size ID	(2010,0050)	U	8INX10IN 8.5INX11IN 10INX12IN 10INX14IN 11INX14IN 11INX17IN 14INX14IN 14INX17IN 24CMX24CM 24CMX30CM A3 A4	Range may be limited by print server/printer.
Magnification Type	(2010,0060)	U	REPLICATE BILINEAR CUBIC NONE	
Min. Density	(2010,0120)	U	0-65535	Printer specific
Max Density	(2010,0130)	U	0-65535	Printer specific
Configuration Information	(2010,0150)	U		Printer specific
Smoothing Type	(2010,0080)	U		Printer specific
Border Density	(2010,0100)	U	BLACK WHITE	
Empty Image Density	(2010,0110)	U	BLACK WHITE	
Trim	(2010,0140)	U	YES NO	

SOP Specific Conformance to Basic Grayscale Image Box SOP Class

Table 15 Supported DIMSE Services for the Basic Grayscale Image Box SOP.

Name	Usage	Description
N-Set	M	The SCP for each potential image of the film box creates an image box instance. Only those instances, which actually contain images, will be updated with the N-SET message.

Table 16 Attributes set for the Basic Grayscale Image Box SOP Class.

Name	Attribute	Range	Description
Image Position	(2020,0010)	1-30	Value according to Image Display Format
Polarity	(2020,0020)	NORMAL, REVERSE	Intensity mapping between display and print

Table 17 Supported DIMSE Services for the Printer SOP.

Name	Usage	Description
N-Event-Report	M	Ignored and not handled.
N-Get	U	May be issued by this device at any time to get printer status.

Table 18 Supported Printer SOP Class Elements.

Name	Usage	Range	Description
Printer Status	U	WARNING FAILURE	During a “Failure” the Print job will be displayed as “Failed”
Printer Status Information	U	Vendor specific	Reported to user if printer status = WARNING or FAILURE.

Proposed Presentation Context to a Color Print Server

Table 19 Color Print Server Presentation Context.

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

SOP Specific Conformance to Basic Color Print Management Meta SOP Class

The Sonoline X150 Print AE provides standard conformance to the color printing Meta SOP classes as an SCU. Specifically, with respect to the Basic Color Print Management Meta SOP Class this means conformance to the underlying SOP classes:

Table 20 Conformance to Color Print Meta SOP Class.

SOP Class Name	SOP Class UID	Conformance Level
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Standard
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Standard
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Standard
Printer SOP Class	1.2.840.10008.5.1.1.16	Standard

SOP Specific Conformance to Basic Color Image Box SOP Class

The Basic Color Print Management Meta SOP Class makes identical use of the *Basic Film Session SOP Class, Basic Film Box SOP Class* and *Printer SOP Class* elements, which have been previously described for grayscale image printing. Therefore, these will not be described again in this section on color printing. However, it should be noted that certain attributes, such as Medium Type which is defined in the Basic Film Session SOP Class, are highly likely to require printer/print server specific media.

Table 21 Supported DIMSE Services for the Basic Color Image Box SOP Class.

Name	Usage	Description
N-Set	M	The SCP for each potential image of the film box creates an image box instance. Only those instances, which actually contain images, will be updated with the N-SET message.

Table 22 Attributes set for the Basic Color Image Box SOP Class.

Name	Attribute	Range	Description
Planar Configuration	(0028,0006)	Color-by-plane	Red plane, Green plane, Blue plane.

The Printer SOP Class behavior is identical to that used for grayscale printing.

Error Handling

The Sonoline X150 Print AE supports the following error codes and reports failures to the user.

Table 23 Supported Error Codes for Printer Classes.

Service Status	Further Meaning	Protocol Codes
Success	Film accepted for Printing	0000
Warning	Film accepted for Printing, one or more settings ignored.	107,116,B600,B605
Failure	Printing not successful	C602, C603, C613

If the print operation is not successful, the image(s) are spooled on the Sonoline X150 hard drive. A user-configured number of additional attempts are made to print the image(s). If these attempts fail, the user must select the job and press “Retry Job” on the Print Status page to complete the print operation.

5.1.2.4 Real World Activity - Worklist

A separate Network association is established by the AE for each Worklist query operation, with only one active query at a time. The association is closed at completion of the query.

Table 24 Worklist Presentation Context Table

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	**UID**	**Name List**	**UID List**		
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

The Sonoline X150 will always act as an SCU and as the client in a client-server model.

SOP Specific Conformance to Modality Worklist Service SOP Classes

The Worklist AE provides conformance to the following DICOM Service SOP Classes as an SCU all at a standard extended level of conformance:

Table 25 Supported SOP Classes

Supported SOP Class Name	SOP Class UID	Conformance Level
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	Standard Extended

The following table provides the list of attributes requested in the Modality Worklist Query.

Table 26 Modality Worklist Information Model Attributes

Attribute Name	Tag
Specific Character Set	(0008,0005)
Accession number	(0008,0050)*
Referring Physician's Name	(0008,0090)
Study Description	(0008,1030)
Admitting Diagnoses Description	(0008,1030)
Referenced Study Sequence	(0008,1110)
>Referenced SOP Class UID	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)
Patient's Name	(0010,0010)*
Patient ID	(0010,0020)*
Patient's Birth Date	(0010,0030)
Patient's Sex	(0010,0040)
Patient's Size	(0010,1020)
Patient's Weight	(0010,1030)
Medical Alerts	(0010,2000)
Contrast Allergies	(0010,2110)
Pregnancy Status	(0010,21C0)
Last Menstrual Date	(0010,21D0)
Patient Comments	(0010,4000)
Study Instance UID	(0020,000D)
Requesting Physician	(0032,1032)
Requested Procedure Description	(0032,1060)
Requested Procedure Code Sequence	(0040,0008)
>Code Value	(0008,0100)
>Coding Scheme Designator	(0008,0102)
>Coding Scheme Version	(0008,0103)
>Code Meaning	(0008,0104)
Special Needs	(0038,0050)
Patient State	(0038,0500)
Scheduled Procedure Step Sequence	(0040,0100)
>Modality	(0008,0060)
>Scheduled Station AE Title	(0040,0001)*
>Scheduled Procedure Step Start Date	(0040,0002)
>Scheduled Procedure Step Start Time	(0040,0003)
>Scheduled Performing Physician's Name	(0040,0006)
>Scheduled Procedure Step Description	(0040,0007)
>Scheduled Protocol Code Sequence	(0040,0008)
>>Code Value	(0008,0100)

Attribute Name	Tag
>>Coding Scheme Designator	(0008,0102)
>>Coding Scheme Version	(0008,0103)
>>Code Meaning	(0008,0104)
>Scheduled Procedure Step ID	(0040,0009)
>Comments on the Scheduled Procedure Step	(0040,0400)
Requested Procedure ID	(0040,1001)*
Reason for the Requested Procedure	(0040,1002)
*Indicates parameter may be populated for query.	

5.1.2.5 Real World Activity - Modality Performed Procedure Step

This operation allows the AE to create an instance of the Modality Performed Procedure Step SOP Class (MPPS) and provide information about a specific real world Performed Procedure Step that is under control of the SCU. This operation is invoked through the DIMSE N-CREATE and N-SET services.

Only the IHE (refer to IHE Rev 5.5) Simple and Abandoned Cases for the relationship between Scheduled Procedure Steps and Performed Procedure Steps is supported. Both cases specify that a 1-to-1 relationship must exist between Scheduled Procedure Step and Performed Procedure Step. In the Simple Case the Performed Procedure Step is completed successfully. In the Abandoned Case the Performed Procedure Step is abandoned before being completed.

A list of scheduled procedures and procedure steps will be accessible from the Worklist and Procedure screens. The Performed Procedure Step User Interface allows the operator to set the status of the performed procedure step. The system shall establish an association for N-CREATE and N-SET, if another N-CREATE or N-SET is available within 5 seconds, it will be sent using the same association.

Starting a Performed Procedure Step

When the user depresses the ‘OK’ button on the New Patient Screen a performed procedure SOP Class instance will be created using the N-CREATE DIMSE service for the selected scheduled procedure.

Ending a Performed Procedure Step

When the user selects ‘Completed’ or ‘Discontinued’ from the MPPS User Interface, the performed procedure step will be closed using the N-SET DIMSE service.

New Patient Request

If the ‘New Patient’ button is selected and there are opened performed procedure steps, the user shall be prompted for a closure status for the opened procedure step by the MPPS User Interface. Any opened procedure steps must be closed before any ‘new patient’ data can be entered.

System Shutdown

If the user requests ‘System Shutdown’ and there is an open performed procedure step, the user will be prompted for a closure status for the open procedure step. All procedure steps should be closed before the system can be shutdown. Failure to close a procedure step will result in the procedure step being set to Discontinued.

Error Handling

If the MPPS operation is not successful, the MPPS command is spooled on the Sonoline X150 hard drive. A user-configured number of additional attempts are made to complete the MPPS Commands. If these attempts fail, the user must select this job and press “Retry Job” on the Store Status page to complete the MPPS operation.

Proposed Presentation Context

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	**UID**	**Name List**	**UID List**		
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Table 27 MPPS Presentation Context Table

The Sonoline X150 system will always act as an SCU and be the client in a client – server model.

SOP Specific Conformance to Modality Performed Procedure Step SOP Classes

The Modality Performed Procedure Step AE provides a conforming implementation of the following DICOM Service SOP Class as an SCU at a standard extended level of conformance.

Table 28 Supported SOP Class

Supported SOP Class Name	SOP Class UID	Conformance Level
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Standard Extended

The following tables provide the list of attributes supported by the AE in the implementation of MPPS SOP Class including N-CREATE, N-SET and Final State attributes. The Sonoline X150 sends N-SET only at final state.

Table 29 Modality Performed Procedure Step Attributes in N-CREATE

Attribute	Tag	Notes
Specific Character Set	(0008,0005)	Always set to “ISO_IR 100”
Scheduled Step Attribute Sequence	(0040,0270)	
>Study Instance UID	(0020,000D)	Value obtained from Modality WorkList; generated by X150 in some cases
>Referenced Study Sequence	(0008,1110)	Populated with contents of Referenced Study Sequence from Modality Worklist if used, empty otherwise. See table F.7.2-1 in PS 3.4-2004 for sequence definition.
>Referenced Patient Sequence	(0008,1120)	Always empty
>Accession Number	(0008,0050)	Value obtained from Modality WorkList
>Requested Procedure ID	(0040,1001)	Value obtained from Modality WorkList
>Requested Procedure Description	(0032,1060)	Value obtained from Modality WorkList
>Scheduled Procedure Step ID	(0040,0009)	Value obtained from Modality WorkList
>Scheduled Procedure Step Description	(0040,0007)	Value obtained from Modality WorkList
>Scheduled Protocol Code Sequence	(0040,0008)	
>>Code Value	(0008,0100)	Value obtained from Modality WorkList
>>Coding Scheme Designator	(0008,0102)	Value obtained from Modality WorkList
>>Coding Scheme Version	(0008,0103)	Value obtained from Modality WorkList
>>Code Meaning	(0008,0104)	Value obtained from Modality WorkList
Patient’s Name	(0010,0010)	Value obtained from Modality WorkList
Patient ID	(0010,0020)	Value obtained from Modality WorkList.
Patient’s Birth Date	(0010,0030)	Value obtained from Modality WorkList
Patient’s Sex	(0010,0040)	Value obtained from Modality WorkList
Performed Procedure Step ID	(0040,0253)	Value obtained from Modality WorkList
Performed Station AE Title	(0040,0241)	The AE title of the X150 on which the procedure was performed.
Performed Station Name	(0040,0242)	
Performed Location	(0040,0243)	
Performed Procedure Step Start Date	(0040,0244)	The start date of the performed procedure step.
Performed Procedure Step Start Time	(0040,0245)	The start time of the performed procedure step.
Performed Procedure Step Status	(0040,0252)	Always set to “In-Progress”.
Performed Procedure Step Description	(0040,0254)	Value obtained from Modality WorkList

Attribute	Tag	Notes
Performed Procedure Type Description	(0040,0255)	Always sent as 0 length attribute
Procedure Code Sequence	(0008,1032)	Populated with contents of Requested Procedure Code Sequence from Modality Worklist if used, empty otherwise. See table F.7.2-1 in PS 3.4-2004 for sequence definition.
Performed Procedure Step End Date	(0040,0250)	Always sent as 0 length attribute
Performed Procedure Step End Time	(0040,0251)	Always sent as 0 length attribute
Modality	(0008,0060)	Always set to US
Study ID	(0020,0010)	Populated from Requested Procedure ID (0040,1001) if Modality Worklist is used; created by X150 otherwise
Performed Protocol Code Sequence	(0040,0260)	Always empty
Performed Series Sequence	(0040,0340)	Always empty

Table 30 Modality Performed Procedure Step Attributes in N-SET

Attribute	Tag	Notes
Performed Procedure Step Status	(0040,0252)	Set to “Discontinued” or “Completed” based on user selection.
Performed Procedure Step End Date	(0040,0250)	Date the procedure step was completed
Performed Procedure Step End Time	(0040,0251)	Time the procedure step was completed
Performed Series Sequence	(0040,0340)	Shall contain only one series
>Performing Physician’s Name	(0008,1050)	
>Protocol Name	(0008,1030)	Exam type specified by the operator.
>Operator’s Name	(0008,1070)	
>Series Instance UID	(0020,000E)	The Instance UID of the series to which the procedure belongs.
>Series Description	(0008,103E)	Always sent as 0 length attribute
>Retrieve AE Title	(0008,0054)	Always sent as 0 length attribute

Attribute	Tag	Notes
>Referenced Image Sequence	(0008,1140)	List of all the images in the series.
>>Referenced SOP Class UID	(0008,1150)	The SOP class UID can be one of: Ultrasound Image Storage 1.2.840.10008.5.1.4.1.1.6.1 Ultrasound Image Storage (Retired) 1.2.840.10008.5.1.4.1.1.6 Secondary Capture Image Storage 1.2.840.10008.5.1.4.1.1.7
>>Referenced SOP Instance UID	(0008,1155)	The SOP instance UID of the image.
>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	Always empty

5.1.2.6 Real-World Activity Storage Commitment

This operation allows the AE to create an instance of the Storage Commitment SOP Class and to provide information about a specific Real World Activity that is under the control of the SCU. The AE invokes a request for safekeeping of images by the N-ACTION REQUEST. Referenced in the N-ACTION Request are the SOP class UID(s) and SOP instance UID(s) for all STORE Class objects requesting commitment by the SCU.

Storage Commit

The Storage Commitment (if enabled) command is sent in the following situations:

a. On series close, when all images and Structured Reports have previously stored successfully.

b. The series was previously closed, all previous stores have succeeded and the last image or Structured Report stores successfully.

c. The series was previously closed, at least one store has succeeded, at least one store has failed and the last store with non-zero retry count fails or succeeds.

d. A series has been partially committed as in c. Later, due to "Retry Job" button press on the Store Status UI screen the store jobs are retried. Another Storage Commit is sent when at least one store has succeeded and the last store with non-zero retry count fails or succeeds.

The Sonoline X150 waits for the return of a successful N-ACTION RESPONSE Status Code applicable for the associated request indicating whether the commitment request was successful or a failure. The Sonoline X150 waits for the N-EVENT REPORT from the SCP for at most 48 hours. The Sonoline X150 is capable of accepting the N-EVENT REPORT on the

association it initiates for the N-ACTION or one initiated by the SCP. Studies with all SOP instances marked as ‘successful’ in the N-EVENT REPORT will be eligible for deletion from the system hard drive.

The Sonoline X150 allows the user to configure a Storage Commitment Server which may be different from the Storage Server. Thus, the Storage Commitment SCP must wait for an appropriate time for the stored images to arrive from the Storage server.

Image-By-Image and Batch Storage Commitment are supported as specified in “Vista DICOM Conformance Requirements for Image Modalities in radiology, Cardiology, Dental, Ophthalmology and other specialities” (Version 2.3).

Storage Commitment of Structured Reports is supported.

Proposed Presentation Context

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	**UID**	**Name List**	**UID List**		
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Table 31 Storage Commitment Presentation Context Table

The Sonoline X150 system will act as an SCU in the ‘Push Model” Storage Commitment SOP Class.

SOP Specific Conformance to Storage Commitment SOP Class

The Storage Commitment AE provides conformance to the following DICOM Service SOP Class as an SCU at a standard level of conformance.

Supported SOP Class Name	SOP Class UID	Conformance Level
Storage Commitment Push Model	1.2.840.10008.1.20.1	Standard

Storage Commitment to Storage Media (CD) is not supported.

Table 32 Supported SOP Class

The following table provides the list of attributes supported by the AE in the implementation of Storage Commitment SOP Class:

Table 33 Storage Commitment Request Attributes in N-ACTION REQUEST

Attribute	Tag	Notes
Transaction UID	(0008,1195)	Generated by X150
Referenced SOP Sequence	(0008,1199)	
>Referenced SOP Class UID	(0008,1150)	
>Referenced SOP Instance UID	(0008,1155)	

5.1.2.7 Error Handling

If the storage commitment operation is not successful, a user-configured number of additional attempts are made. If these attempts fail, the user must select the job and press “Retry Job” on the DICOM Store Queue page to complete the storage commitment operation.

6.0 Removable Media Interchange Specifications

This implementation supports 120mm CD medium.

6.1 Supported Application Profiles

Sonoline X150 provides standard conformance to the following four Ultrasound Application Profiles. A DICOM 3.0 conformant DICOMDIR file is created together with the directory structures and image files.

Table 34 Application Profiles, Real-World Activities, and Roles

Supported AP	Real-World Activity	Roles	SC Option
STD-US-ID-SF-CDR	Create CD-R	FSC, FSR	Interchange
STD-US-SC-SF-CDR	Create CD-R	FSC	Interchange

6.2 Supported SOP Classes

6.2.1 Supported SOP Classes and Transfer Syntaxes

This implementation provides standard conformance to the following DICOM 3.0 SOP Classes.

Table 35 Transfer Syntaxes for Media Interchange

Service SOP Class Name	SOP Class UID	Transfer Syntax Name	Transfer Syntax UID List
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1

6.3 Information Object Definition and DICOMDIR Keys

6.3.1 DICOM File Meta Information

The following table denotes the attributes included in the Ultrasound Image Object as implemented on the Sonoline X150 in addition to the attributes listed in Table 6.

Table 36 US Image Attributes Used (Refer Table 6 for additional attributes used)

Attribute Name	Tag	Notes
File Preamble	No Tag or Length fields	All bytes are set to 00H
DICOM Prefix	No Tag or Length fields	Set to DICOM Prefix “DICM”
Group length	(0002,0000)	
File Meta Information Version	(0002,0001)	Always set to 0001H
Media Storage SOP Class UID	(0002,0002)	Always Ultrasound Image 1.2.840.10008.5.1.4.1.1.6.1
Media Storage SOP Instance UID	(0002,0003)	
Transfer Syntax UID	(0002,0010)	Always Explicit VR Little Endian 1.2.840.10008.1.2.1
Implementation Class UID	(0002,0012)	Always set to 1.3.12.2.1107.5.5.5
Implementation Version Name	(0002,0013)	Always set to MergeCOM3_351

The following table denotes the attributes included in the Comprehensive SR Object as implemented on the Sonoline X150 in addition to the attributes listed in Table 8.

Table 37 Comprehensive SR Attributes Used (Refer Table 8 for additional attributes used)

Attribute	Tag	Notes
File Preamble	No Tag or Length fields	All bytes are set to 0
DICOM Prefix	No Tag or Length fields	Set to “DICM”
Group length	(0002,0000)	
File Meta Information Version	(0002,0001)	Always set to 0001H
Media Storage SOP Class UID	(0002,0002)	Always Comprehensive SR 1.2.840.10008.5.1.4.1.1.88.33
Media Storage SOP Instance UID	(0002,0003)	
Transfer Syntax UID	(0002,0010)	Always Explicit VR Little Endian 1.2.840.10008.1.2.1
Implementation Class UID	(0002,0012)	Always set to 1.3.12.2.1107.5.5.5
Implementation Version Name	(0002,0013)	Always set to MergeCOM3_351

6.3.2 Basic Directory Information Object Definitions - File-set Identification Module

Attribute	Tag	Notes
File-Set ID	(0004,1130)	Set to serial number + YYMMDD + 3 digit counter. Volume Label has this same value.

6.3.3 Basic Directory Information Object Definitions - Directory Identification Module

Attribute	Tag	Notes
Offset of the First Directory Record of the Root Directory Entry	(0004,1200)	
Offset of the Last Directory Record of the Root Directory Entry	(0004,1202)	
File-set Consistency Flag	(0004,1212)	
Directory Record Sequence	(0004,1220)	
>Offset of the Next Directory Record	(0004,1400)	
>Record In-use Flag	(0004,1410)	
>Offset of Referenced Lower-Level Directory Entity	(0004,1420)	
>Directory Record Type	(0004,1430)	
>Referenced File ID	(0004,1500)	
>Referenced SOP Class UID in File	(0004,1510)	
>Referenced SOP Instance UID in File	(0004,1511)	

6.3.4 Physical Storage Media and Media Formats

The physical storage media supported are 120mm CD-R, CD-RW medium.

7.0 Communication Profiles

All Sonoline X150 system application entities utilize the DICOM 3.0 TCP/IP communication support as defined in PS3.8 (Part 8) of the DICOM 3.0 Standard.

7.1 TCP/IP Stack Supported

Each process inherits its TCP/IP stack from the Sonoline X150's operating systems TCP/IP stack. The local AE Port number is always set to 104.

7.1.1 Physical Media Supported

Standard representations of IEEE 802.3 10BaseT/100BaseT ("twisted pair") is supported

7.1.2 Chapter Extensions/Specializations/Privatizations

Pixel Spacing information is only provided for single, full screen, and 2D image types (B-mode, B-mode with color, and B-mode with power).

Appendix A lists the DICOM SR mappings used by the Sonoline X150 AE in Obstetric Structured Reports. All private concept names use the Coding Scheme Designator "X150S".

8.0 Configuration

Sonoline X150 Networking and DICOM parameters can be configured through the Sonoline X150 System Presets Menu screens. The following configuration is supported:

- General system
- Network (local and remote)
- DICOM Store
- DICOM Print
- DICOM Modality Worklist
- DICOM Storage Commitment
- DICOM Modality Performed Procedure Step

8.1 General System Configuration

The following system parameter can be configured via the Sonoline X150 System Presets Basic Menu screens. This parameter is mapped to a DICOM image attribute:

- Hospital Name

8.1.1 Hospital Name

The user can enter the organization (i.e. hospital, clinic, etc.) as a text string in the Hospital Name field of the System Presets - General menu. The Organization Name field is transferred to DICOM devices as Institution Name - DICOM data element (0008, 0080).

8.2 DICOM Network Configuration

DICOM and networking parameters can be configured for both the local Sonoline X150 device and remote DICOM service class providers through the System Presets DICOM Menu.

8.2.1 Local

The Sonoline X150 local network parameters are configurable. The following network parameters can be configured for a Sonoline X150 device:

- Host Name
- IP address
- Subnet IP mask
- Default Gateway

- DICOM Application Entity Title

8.2.2 Remote

Multiple DICOM service class providers can be configured through the system presets. The following network parameters can be configured for each remote device:

- DICOM Device Application Entity Title
- IP address
- Port Number

8.2.2.1 DICOM Store Configuration

Several configuration settings are provided in addition to those described in Section 8.2.2.

The Image Format setting provides control over the Presentation Contexts proposed during Association negotiation. This is documented in Section 5.1.1.2.

8.2.2.2 DICOM Storage Commitment Configuration

Configuration of DICOM Storage Commitment remote devices must be performed separately from DICOM Store Configuration. The Sonoline X150 supports Storage Commitment to the same remote device as Store or to a different device.

8.2.2.3 DICOM Modality Worklist Configuration

Configuration of DICOM Modality Worklist remote devices

8.2.2.4 DICOM Modality Performed Procedure Step Configuration

Configuration of DICOM Modality Performed Procedure Step remote devices must be performed separately from DICOM Modality Worklist Configuration. The Sonoline X150 supports MPPS to the same remote device as Modality Worklist or to a different device.

The “Store Image Format” setting controls the Referenced SOP Class UID (0008,1150) in the Referenced Image Sequence (0008,1140) of the MPPS N-SET sent by the Sonoline X150. Due to the Sonoline X150’s ability to select from multiple Presentation Contexts during Association Negotiation, it is necessary to use this setting.

In the majority of installations the “Store Image Format” should be left at the default setting of “New Ultrasound”. There are two cases when the “Store Image Format” must be set to “Old Ultrasound” or “Secondary Capture”:

1. When the active Storage Server “Image Format” is set to “Old Ultrasound” or “Secondary Capture”.
2. When the active Storage Server “Image Format” is set to “Automatic”, but the Storage Server does not support US Image.

In both cases the correct setting can be determined by reviewing the DICOM Conformance Statement of the Storage Server and following the instructions below. DICOM Conformance Statements are usually available on the manufacturer’s Web site.

If at least US Image is listed in the DICOM Conformance Statement and the active Storage Server “Image Format” is set to “Automatic” then “New Ultrasound” is the correct setting for “Store Image Format”.

If the above is not true and at least US Image (Retired) is listed in the DICOM Conformance Statement then “Old Ultrasound” is the correct setting for “Store Image Format”.

If neither of the above are true then “Secondary Capture” is the correct setting for “Store Image Format”.

8.2.2.5 DICOM Print Configuration

For each DICOM Print server, the following data is configurable by the user using the System Presets DICOM Print User Interface. The effect of changing parameters of the DICOM Print server will be seen at the next created film sheet. The current film sheet is not affected by changing these parameters.

Table 38 User-Configurable Printer Parameters.

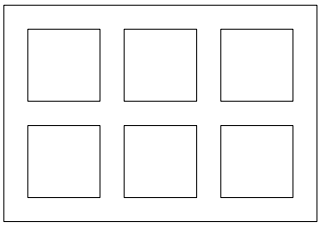
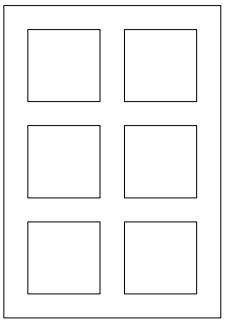
Parameter	Description
Printer Type:	Color or Black and White - depends on printer
Film Size	Select the size of the film - 8x10 inches, 8.5x11 inches, 10x12 inches, 10x14 inches, 11x14 inches, 11x17 inches, 14x14 inches, 14x17 inches, 24x24 centimeters, 24x30 centimeters, A3, or A4.
Film Orientation	Select from Portrait: or Landscape:
Display Format	You must supply the number of rows and columns of images on the printed sheet. For example, a 6 on 1 print with Landscape mode should have 3 columns and 2 rows:  A 6 on 1 with Portrait mode would have 2 columns and 3 rows: 

Table 38 User-Configurable Printer Parameters. (Continued)

Parameter	Description
Print Priority	HIGH, MEDIUM or LOW
Medium Type	PAPER, CLEAR FILM, BLUE FILM, TRANSPARENCY or CURRENT (to use the currently loaded media)
Film Destination	MAGAZINE, PROCESSOR or CURRENT
Max. Density	Used to define the Black value - printer specific
Min. Density	Used to define the White value - printer specific
Smoothing Type	Printer specific value
Border Density	BLACK or WHITE
Empty Image Density	BLACK or WHITE
Trim	YES/NO to having a border around each image
Polarity	Normal/reverse. Normal means black is printed as black. Reverse means the grayscale is inverted so that black comes out as white and white as black.
Magnification Type	Replicate, Bilinear, Cubic, None
Configuration Information:	Printer Specific values

8.3 External Equipment Configuration

The Sonoline X150 user can configure “Hard Key” to “Output Device” mapping through the System Presets - Customize Keys. Print images are acquired and sent to the assigned device when the user presses the associated key. The following key assignments are supported:

- **Print/Store 1** – This key can be assigned to any configured DICOM Printer, DICOM Store or OEM printer device.
- **Print/Store 2** – This key can be assigned to any configured DICOM Printer, DICOM Store or OEM printer device.

8.4 Support of Extended Character Sets

The “ISO-IR 100” Latin Alphabet 1 Extended character set is supported by the Sonoline X150 system.

9.0 Security

9.1 Security Profiles

None supported.

9.2 Association Level Security

None supported.

9.3 Application Level Security

None supported.

9.4 Virus Protection

The Sonoline X150 computer system's networking has been configured to significantly reduce the possibility of virus and hacking vulnerabilities. On the X150 computer system, all ingress TCP and UDP ports are closed and/or absent of any type of server. The only exception to this is due to the necessity of a DICOM server available at ingress TCP port 104. Additionally, all non-essential computer services and components are disabled to minimize X150 egress network footprint.

Outside of some minimal network exchanges required by the X150's commercial computer operating system, the only network connections initiated by the X150 are for DICOM connectivity and network-share export function.

10.0 Appendix A: Mapping for Obstetric DICOM SR

The following table lists the DICOM Structured Report mappings used by the Sonoline X150 1.0 in Obstetric Structured Reports. All private concept names use the Coding Scheme Designator “G60S”.

Table 39 DICOM SR Mappings for Adult Echocardiography Structured Reports

Platform Name	Base Measurement Concept Name	Template Section	Inferred From	Modifiers/Properties
PATIENT_NAME				
PATIENT_ID				
SEX				
REFERRING_MD				
BIRTH_DATE				
PATIENT_AGE				
HEIGHT	LN 8302-2, "Patient Height"	TID 5001: OB- GYN-Patient Characteris-tics		
WEIGHT	LN 29463-7, "Patient Weight"	TID 5001: OB- GYN-Patient Characteris-tics		
LMP	LN 11955-2, "LMP"	TID 5002: OB-GYN Procedure Summary Section CID 12003: OB-GYN Dates		
DIAGNOSIS_DESCRIPTION	DCM, 121106, "Com-ment"	TID 5001: OB- GYN-Patient Characteris-tics		
GRAVIDA	LN 11996-6, "Gravida"	TID 5001: OB- GYN-Patient Characteris-tics		
PARA	LN 11977-6, "Para"	TID 5001: OB- GYN-Patient Characteris-tics		
AB	LN 11612-9, "Aborta"	TID 5001: OB- GYN-Patient Characteris-tics		

ECTOPIC	LN 33065-4, "Ectopic Pregnancies"	TID 5001: OB- GYN-Patient Characteristics		
FETAL_AGE	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary		
LMP_ESTIMATE_FETAL_AGE	LN 11885-1, "Gestational Age by LMP"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary		
IVF_DATE_TIME	No match in DICOM Spec	TID 5001: Patient Characteristics	Private Code: IVF_Date_Time_G60S	
IVF_ESTIMATE_FETAL_AGE	No match in DICOM Spec	TID 5001: Patient Characteristics	Private Code: IVF_Est_Fetal_Age_G60S	
BPD	LN 11820-8, "Biparietal Diameter"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_BPD_HADLOCK	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11902-4, BPD, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_BPD_HADLOCK_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11902-4, BPD, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_HADLOCK_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11902-4, BPD, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Merz_G60S (Equation)	

MA_BPD_MERZ_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Merz_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_MERZ_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Merz_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_LASSER	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Lasser_G60S (Equation)	
MA_BPD_LASSER_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Lasser_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_LASSER_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Lasser_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_REMPEN	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33083-7, BPD, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	
MA_BPD_REMPEN_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33083-7, BPD, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_REMPEN_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33083-7, BPD, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_ASUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33079-5, BPD, ASUM 1989 (CID 12013: Gestational Age Equations and Tables)	

MA_BPD_TOKYO	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33085-2, BPD, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	
MA_BPD_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33085-2, BPD, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33085-2, BPD, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_OSAKA	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33082-9, BPD, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	
MA_BPD_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33082-9, BPD, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33082-9, BPD, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BPD_JSUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_JSUM_G60S (Equation)	
MA_BPD_JSUM_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_JSUM_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
OFD	LN 11851-3, "Occipital-Frontal Diameter"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		

MA_OFD_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_OFD_Merz_G60S (Equation)	
MA_OFD_ASUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33119-9, OFD, ASUM 2000 (CID 12013: Gestational Age Equations and Tables)	
HC	LN 11984-2, "Head Circumference"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_HC_HADLOCK	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11932-1, HC, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_HC_HADLOCK_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11932-1, HC, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_HC_HADLOCK_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11932-1, HC, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_HC_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33115-7, HC, Merz 1988 (CID 12013: Gestational Age Equations and Tables)	
MA_HC_MERZ_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33115-7, HC, Merz 1988 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_HC_MERZ_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33115-7, HC, Merz 1988 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

MA_HC_LASSER	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_HC_Lasser_G60S (Equation)	
MA_HC_LASSER_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_HC_Lasser_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_HC_LASSER_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_HC_Lasser_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
AC	LN 11979-2, "Abdominal Circumference"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_AC_HADLOCK	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11892-7, AC, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_AC_HADLOCK_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11892-7, AC, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_AC_HADLOCK_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11892-7, AC, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_AC_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_Merz_G60S (Equation)	
MA_AC_MERZ_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_Merz_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)

MA_AC_MERZ_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_Merz_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_AC_LASSER	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_Lasser_G60S (Equation)	
MA_AC_LASSER_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_Lasser_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_AC_LASSER_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_Lasser_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_AC_JSUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_JSUM_G60S (Equation)	
MA_AC_JSUM_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_JSUM_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_AC_JSUM_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AC_JSUM_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
FL	LN 11963-6, "Femur Length"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_FL_JEANTY	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11923-0, FL, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	

MA_FL_JEANTY_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11923-0, FL, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FL_JEANTY_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11923-0, FL, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_FL_HADLOCK	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11920-6, FL, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_FL_HADLOCK_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11920-6, FL, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FL_HADLOCK_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11920-6, FL, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_FL_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33542-2, FL, Merz 1988 (CID 12013: Gestational Age Equations and Tables)	
MA_FL_MERZ_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33542-2, FL, Merz 1988 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FL_MERZ_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33542-2, FL, Merz 1988 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_FL_TOKYO	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33103-3, FL, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	

MA_FL_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33103-3, FL, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FL_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33103-3, FL, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_FL_OSAKA	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33101-7, FL, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	
MA_FL_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33101-7, FL, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FL_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33101-7, FL, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_FL_JSUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_FL_JSUM_G60S (Equation)	
MA_FL_JSUM_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_FL_JSUM_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FL_JSUM_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_FL_JSUM_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
CRL	LN 11957-8, "Crown Rump Length"	TID 5011: Early Gestation Section CID 12009: Early Gestation Biometry Measurements		

MA_CRL_HADLOCK	LN 18185-9, "Gestational Age"	TID 50011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11910-7, CRL, Hadlock 1992 (CID 12013: Gestational Age Equations and Tables)	
MA_CRL_HADLOCK_P2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11910-7, CRL, Hadlock 1992 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_HADLOCK_M2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11910-7, CRL, Hadlock 1992 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_ROBINSON	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11914-9, CRL, Robinson 1975 (CID 12013: Gestational Age Equations and Tables)	
MA_CRL_ROBINSON_P2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11914-9, CRL, Robinson 1975 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_ROBINSON_M2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11914-9, CRL, Robinson 1975 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_HANSMAN	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33540-6, CRL, Hansmann 1986 (CID 12013: Gestational Age Equations and Tables)	
MA_CRL_HANSMAN_P2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33540-6, CRL, Hansmann 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_HANSMAN_M2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33540-6, CRL, Hansmann 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

MA_CRL_LASSER	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	Private Code: MA_CRL_Lasser_G60S (Equation)	
MA_CRL_LASSER_P2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	Private Code: MA_CRL_Lasser_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_LASSER_M2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	Private Code: MA_CRL_Lasser_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_ASUM	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33090-2, CRL, ASUM 2000 (CID 12013: Gestational Age Equations and Tables)	
MA_CRL_TOKYO	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33096-9, CRL, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	
MA_CRL_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33096-9, CRL, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33096-9, CRL, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_OSAKA	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33093-6, CRL, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	
MA_CRL_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33093-6, CRL, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)

MA_CRL_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 33093-6, CRL, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_JSUM	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	Private Code: MA_CRL_JSUM_G60S (Equation)	
MA_CRL_JSUM_P1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	Private Code: MA_CRL_JSUM_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CRL_JSUM_M1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	Private Code: MA_CRL_JSUM_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
HL	LN 11966-9, "Humerus Length"	TID 5006: Fetal Long Bones Section CID 12006: Fetal Long Bones Biometry Measurements		
MA_HL_JEANTY	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11936-2, Humerus, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_HL_JEANTY_P2SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11936-2, Humerus, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_HL_JEANTY_M2SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11936-2, Humerus, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

MA_HL_OSAKA	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 33117-3, Humerus Length, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	
MA_HL_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 33117-3, Humerus Length, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_HL_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 33117-3, Humerus Length, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
UL	LN 11969-3, "Ulna Length"	TID 5006: Fetal Long Bones Section CID 12006: Fetal Long Bones Biometry Measurements		
MA_UL_JEANTY	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11944-6, Ulna, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_UL_JEANTY_P2SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11944-6, Ulna, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_UL_JEANTY_M2SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11944-6, Ulna, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
TL	LN 11968-5, "Tibia Length"	TID 5006: Fetal Long Bones Section CID 12006: Fetal Long Bones Biometry Measurements		
MA_TL_JEANTY	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11941-2, Tibia, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	

MA_TL_JEANTY_P2SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11941-2, Tibia, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_TL_JEANTY_M2SD	LN 18185-9, "Gestational Age"	TID 5006: Fetal Long Bones Section TID 5008: Fetal Biometry Group	LN 11941-2, Tibia, Jeanty 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
FT	LN 11965-1, "Foot Length"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_FT_MERCER	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11926-3, Foot Length, Mercer 1987 (CID 12013: Gestational Age Equations and Tables)	
MA_FT_MERCER_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11926-3, Foot Length, Mercer 1987 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_FT_MERCER_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11926-3, Foot Length, Mercer 1987 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MSD	LN 11850-5, "Gestational Sac Diameter"	TID 5011: Early Gestation Section CID 12009: Early Gestation Biometry Measurements		
MA_MSD_REMPEN	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11929-7, GS, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	

MA_MSD_REMPEN_P2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11929-7, GS, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_MSD_REMPEN_M2SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11929-7, GS, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_MSD_HELLMAN	LN 18185-9, "Gestational Age"	TID 5011: Early Gestation Section TID 5008: Fetal Biometry Group	LN 11928-9, GS, Hellman 1969 (CID 12013: Gestational Age Equations and Tables)	
LN	LN 11629-3, "Outer Orbital Diameter"	TID 5007: Fetal Cranium Section CID 12007: Fetal Cranium		
MA_BN_JEANTY	LN 18185-9, "Gestational Age"	TID 5007: Fetal Cranium Section TID 5008: Fetal Biometry Group	Private Code: MA_BN_Jeanty_G60S (Equation)	
MA_BN_JEANTY_P2SD	LN 18185-9, "Gestational Age"	TID 5007: Fetal Cranium Section TID 5008: Fetal Biometry Group	Private Code: MA_BN_Jeanty_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_BN_JEANTY_M2SD	LN 18185-9, "Gestational Age"	TID 5007: Fetal Cranium Section TID 5008: Fetal Biometry Group	Private Code: MA_BN_Jeanty_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_BN_TONGSONG	LN 18185-9, "Gestational Age"	TID 5007: Fetal Cranium Section TID 5008: Fetal Biometry Group	Private Code: MA_BN_Tongsong_G60S (Equation)	
MA_BN_TONGSONG_P2SD	LN 18185-9, "Gestational Age"	TID 5007: Fetal Cranium Section TID 5008: Fetal Biometry Group	Private Code: MA_BN_Tongsong_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)

MA_BN_TONGSONG_M2SD	LN 18185-9, "Gestational Age"	TID 5007: Fetal Cranium Section TID 5008: Fetal Biometry Group	Private Code: MA_BN_Tongsong_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
ASD	LN 11818-2, "Anterior-Posterior Abdominal Diameter"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_ASD_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_ASD_Merz_G60S (Equation)	
ATD	LN 11862-0, "Tranverse Abdominal Diameter"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_ATD_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_ATD_Merz_G60S (Equation)	
GS	LN 11850-5, "Gestational Sac Diameter"	TID 5011: Early Gestational Section TID 5008: Fetal Biometry Group		
MA_GS_TOKYO	LN 18185-9, "Gestational Age"	TID 5011: Early Gestational Section TID 5008: Fetal Biometry Group	LN 33108-2, GS, Tokyo 1986	
MA_GS_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestational Section TID 5008: Fetal Biometry Group	LN 33108-2, GS, Tokyo 1986	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_GS_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5011: Early Gestational Section TID 5008: Fetal Biometry Group	LN 33108-2, GS, Tokyo 1986	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

FTA	LN 33068-8, "Thoracic Area"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
MA_FTA_OSAKA	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_FTA_Osaka_G60S (Equation)	
CL	LN 11962-8, "Clavicle Length"	TID 5006: Fetal Long Bones Section CID 12006: Fetal Long Bones Biometry Measurements		
TC	LN 11988-3, "Thoracic Circumference"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
RIGHT_RL	LN 11836-4, "Right Kidney Length"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
LEFT_RL	LN 11834-9, "Left Kidney Length"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
RIGHT_RAP	LN 11855-4, "Right Kidney Thickness"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		

LEFT_RAP	LN 11853-9, "Left Kidney Thickness"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
AFI	LN 11627-7, "Amniotic Fluid Index"	TID 5010: Amniotic Sac Section		
YOLK_SAC	LN 11816-6, "Yolk Sac Length"	TID 5011: Early Gestation CID 12009: Early Gestation Biometry Measurements		
HW	LN 12170-7, "Width of Hemisphere"	TID 5007: Fetal Cranium Section CID 12007: Fetal Cranium		
TCD	LN 11863-8, "Trans Cerebellar Diameter"	TID 5007: Fetal Cranium Section CID 12007: Fetal Cranium		
LVW	LN 12171-5, "Lateral Ventrical Width"	TID 5007: Fetal Cranium Section CID 12007: Fetal Cranium		
CIST_MAGNA	LN 11860-4, "Cisterna Magna Length"	TID 5007: Fetal Cranium Section CID 12007: Fetal Cranium		
CERVIX_LEN (used for OB)	LN 11961-0, "Cervix Length"	TID 5015: Pelvis and Uterus Section CID 12011: Ultrasound Pelvis and Uterus		
NT	LN 12146-7, "Nuchal Fold Thickness"	TID 5007: Fetal Cranium Section CID 12007: Fetal Cranium		

UMB_VD	SRT-G-0364, "Vessel Lumen Diameter"	TID 5026: Ob-GYN Pelvic Vascular Ultrasound Measurement Group CID 12119: Vascular Ultrasound Property CID 12122: Other Vascular Properties		
FHR	LN 11948-7, "Fetal Heart Rate"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary		
APTD	LN 11819-0, "Anterior-Posterior Trunk Diameter"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
TTD	LN 11864-6, "Transverse Thoracic Diameter"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
UMB_A_SYSTOLE	LN 11726-7, "Peak Systolic Velocity"	TID 5026: OB-GYN Pelvic Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12140, Pelvic Vasculature Anatomical Location): SRT T-F1810, "Umbilical Artery"	
UMB_A_DIASTOLE	LN 11653-3, End Diastolic Velocity"	TID 5026: OB-GYN Pelvic Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12140, Pelvic Vasculature Anatomical Location): SRT T-F1810, "Umbilical Artery"	

UMB_A_S_D	LN 12144-2, "Systolic to Diastolic Velocity Ratio"	TID 5026: OB-GYN Pelvic Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12140, Pelvic Vasculature Anatomical Location): SRT T-F1810, "Umbilical Artery"	
UMB_A_RI	LN 12023-8, "Resistivity Index"	TID 5026: OB-GYN Pelvic Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12140, Pelvic Vasculature Anatomical Location): SRT T-F1810, "Umbilical Artery"	
UMB_A_PI	LN 12008-9, "Pulsatility Index"	TID 5026: OB-GYN Pelvic Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12140, Pelvic Vasculature Anatomical Location): SRT T-F1810, "Umbilical Artery"	
MCA_SYSTOLE	LN 11726-7, "Peak Systolic Velocity"	TID 5025: OB-GYN Fetal Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12141, Fetal Vasculature Anatomical Location): SRT T-45600, "Middle Cerebral Artery"	
MCA_DIASTOLE	LN 11653-3, End Diastolic Velocity"	TID 5025: OB-GYN Fetal Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12141, Fetal Vasculature Anatomical Location): SRT T-45600, "Middle Cerebral Artery"	
MCA_S_D	LN 12144-2, "Systolic to Diastolic Velocity Ratio"	TID 5025: OB-GYN Fetal Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12141, Fetal Vasculature Anatomical Location): SRT T-45600, "Middle Cerebral Artery"	

MCA_RI	LN 12023-8, "Resistivity Index"	TID 5025: OB-GYN Fetal Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12141, Fetal Vasculature Anatomical Location): SRT T-45600, "Middle Cerebral Artery"	
MCA_PI	LN 12008-9, "Pulsatility Index"	TID 5025: OB-GYN Fetal Vascular Measurement Group CID 12119: Vascular Ultrasound Property CID 12120: Blood Velocity Measurements	Anatomy Group (CID 12141, Fetal Vasculature Anatomical Location): SRT T-45600, "Middle Cerebral Artery"	
EFW1_HADLOCK1	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock1_G60S (Equation)	
EFW1_HADLOCK1_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock1_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_HADLOCK1_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock1_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_HADLOCK2	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock2_G60S (Equation)	
EFW1_HADLOCK2_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock2_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_HADLOCK2_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock2_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

EFW1_HADLOCK3	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock3_G60S (Equation)	
EFW1_HADLOCK3_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock3_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_HADLOCK3_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock3_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_HADLOCK4	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock4_G60S (Equation)	
EFW1_HADLOCK4_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock4_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_HADLOCK4_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Hadlock4_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_SCMACHER	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Scmacher_G60S (Equation)	
EFW1_SCMACHER_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Scmacher_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_SCMACHER_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Scmacher_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

EFW1_HANSMANN	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33139-7, EFW by BPD, TTD, Hansmann 1986 (CID 12014: OB Fetal Body Weight Equations and Tables)	
EFW1_HANSMANN_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33139-7, EFW by BPD, TTD, Hansmann 1986 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_HANSMANN_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33139-7, EFW by BPD, TTD, Hansmann 1986 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_MERZ	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Merz_G60S (Equation)	
EFW1_MERZ_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Merz_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_MERZ_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_Merz_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_SHEPARD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 11739-0, EFW by AC and BPD, Shepard 1982 (CID 12014: OB Fetal Body Weight Equations and Tables)	

EFW1_SHEPARD_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 11739-0, EFW by AC and BPD, Shepard 1982 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_SHEPARD_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 11739-0, EFW by AC and BPD, Shepard 1982 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_TOKYO	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33144-7, EFW by BPD, APAD, TAD, FL, Tokyo 1987 (CID 12014: OB Fetal Body Weight Equations and Tables)	
EFW1_TOKYO_P1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33144-7, EFW by BPD, APAD, TAD, FL, Tokyo 1987 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_TOKYO_M1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33144-7, EFW by BPD, APAD, TAD, FL, Tokyo 1987 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_EFW1_TOKYO	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_Tokyo_G60S (Equation)	
MA_EFW1_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_Tokyo_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)

MA_EFW1_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_Tokyo_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_OSAKA	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33140-5, EFW by BPD, FTA, FL, Osaka 1990 (CID 12014: OB Fetal Body Weight Equations and Tables)	
EFW1_OSAKA_P1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33140-5, EFW by BPD, FTA, FL, Osaka 1990 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW1_OSAKA_M1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33140-5, EFW by BPD, FTA, FL, Osaka 1990 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_EFW1_OSAKA	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_Osaka_G60S (Equation)	
MA_EFW1_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_Osaka_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_EFW1_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_Osaka_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW1_JSUM	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW1_JSUM_G60S (Equation)	

MA_EFW1_JSUM	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW1_JSUM_G60S (Equation)	
EFW2_HADLOCK1	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock1_G60S (Equation)	
EFW2_HADLOCK1_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock1_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_HADLOCK1_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock1_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_HADLOCK2	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock2_G60S (Equation)	
EFW2_HADLOCK2_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock2_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_HADLOCK2_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock2_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_HADLOCK3	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock3_G60S (Equation)	
EFW2_HADLOCK3_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock3_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)

EFW2_HADLOCK3_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock3_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_HADLOCK4	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock4_G60S (Equation)	
EFW2_HADLOCK4_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock4_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_HADLOCK4_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Hadlock4_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_SCMACHER	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Scmacher_G60S (Equation)	
EFW2_SCMACHER_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Scmacher_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_SCMACHER_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Scmacher_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_HANSMANN	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33139-7, EFW by BPD, TTD, Hansmann 1986 (CID 12014: OB Fetal Body Weight Equations and Tables)	

EFW2_HANSMANN_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33139-7, EFW by BPD, TTD, Hansmann 1986 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_HANSMANN_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33139-7, EFW by BPD, TTD, Hansmann 1986 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_MERZ	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Merz_G60S (Equation)	
EFW2_MERZ_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Merz_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_MERZ_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_Merz_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_SHEPARD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 11739-0, EFW by AC and BPD, Shepard 1982 (CID 12014: OB Fetal Body Weight Equations and Tables)	
EFW2_SHEPARD_P2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 11739-0, EFW by AC and BPD, Shepard 1982 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)

EFW2_SHEPARD_M2SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 11739-0, EFW by AC and BPD, Shepard 1982 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_TOKYO	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33144-7, EFW by BPD, APAD, TAD, FL, Tokyo 1987 (CID 12014: OB Fetal Body Weight Equations and Tables)	
EFW2_TOKYO_P1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33144-7, EFW by BPD, APAD, TAD, FL, Tokyo 1987 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_TOKYO_M1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33144-7, EFW by BPD, APAD, TAD, FL, Tokyo 1987 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_EFW2_TOKYO	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_Tokyo_G60S (Equation)	
MA_EFW2_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_Tokyo_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_EFW2_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_Tokyo_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

EFW2_OSAKA	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33140-5, EFW by BPD, FTA, FL, Osaka 1990 (CID 12014: OB Fetal Body Weight Equations and Tables)	
EFW2_OSAKA_P1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33140-5, EFW by BPD, FTA, FL, Osaka 1990 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
EFW2_OSAKA_M1SD	LN 11727-5, "Estimated Weight"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary CID 12012: OB Equations and Tables	LN 33140-5, EFW by BPD, FTA, FL, Osaka 1990 (CID 12014: OB Fetal Body Weight Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_EFW2_OSAKA	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_Osaka_G60S (Equation)	
MA_EFW2_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_Osaka_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_EFW2_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_Osaka_G60S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
EFW2_JSUM	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: EFW2_JSUM_G60S (Equation)	
MA_EFW2_JSUM	LN 18185-9, "Gestational Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: MA_EFW2_JSUM_G60S (Equation)	

RATIO_HC_AC_CAMPBELL	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_HC_AC_Campbell_G60S (Equation)	
RATIO_HC_AC_CAMPBELL_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_HC_AC_Campbell_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit
RATIO_HC_AC_CAMPBELL_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_HC_AC_Campbell_G60S (Equation)	SRT R-10041, Normal Range Lower Limit
RATIO_FL_AC_HADLOCK	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_FL_AC_Hadlock_G60S (Equation)	
RATIO_FL_AC_HADLOCK_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_FL_AC_Hadlock_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit
RATIO_FL_AC_HADLOCK_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_FL_AC_Hadlock_G60S (Equation)	SRT R-10041, Normal Range Lower Limit
RATIO_FL_BPD_HOHLER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_FL_BPD_Hohler_G60S (Equation)	
RATIO_FL_BPD_HOHLER_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_FL_BPD_Hohler_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit
RATIO_FL_BPD_HOHLER_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_FL_BPD_Hohler_G60S (Equation)	SRT R-10041, Normal Range Lower Limit
RATIO_TCD_AC_MEYER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_TCD_AC_Meyer_G60S (Equation)	
RATIO_TCD_AC_MEYER_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_TCD_AC_Meyer_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit

RATIO_TCD_AC_MEYER_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_TCD_AC_Meyer_G60S (Equation)	SRT R-10041, Normal Range Lower Limit
RATIO_LVW_HW_JOHNSON	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_LVW_HW_Johnson_G60S (Equation)	
RATIO_LVW_HW_JOHNSON_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_LVW_HW_Johnson_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit
RATIO_LVW_HW_JOHNSON_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_LVW_HW_Johnson_G60S (Equation)	SRT R-10041, Normal Range Lower Limit
RATIO_CI_HADLOCK	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_CI_Hadlock_G60S (Equation)	
RATIO_CI_HADLOCK_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_CI_Hadlock_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit
RATIO_CI_HADLOCK_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_CI_Hadlock_G60S (Equation)	SRT R-10041, Normal Range Lower Limit
RATIO_CI_CHITTY	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_CI_CHITTY_G60S (Equation)	
RATIO_CI_CHITTY_UPPER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_CI_CHITTY_G60S (Equation)	SRT R-0038B, Normal Range Upper Limit
RATIO_CI_CHITTY_LOWER	No match in DICOM Spec	TID 5004: Fetal Biometry Ratio Section CID 12004: Fetal Biometry Ratios	Private Code: RATIO_CI_CHITTY_G60S (Equation)	SRT R-10041, Normal Range Lower Limit

AXT	LN 33191-8, "APAD * TAD"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measure-ments		
MA_AXT_TOKYO	LN 18185-9, "Gesta-tional Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AXT_Tokyo_G60 S (Equation)	
MA_AXT_TOKYO_P1 SD	LN 18185-9, "Gesta-tional Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AXT_Tokyo_G60 S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_AXT_TOKYO_M 1SD	LN 18185-9, "Gesta-tional Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_AXT_Tokyo_G60 S (Equation)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
USMA_AVARAGE	LN 11888-5, "Com-posite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary		
USMA_HADLOCK1	LN 11888-5, "Com-posite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock1_G 60S (Equation)	
USMA_HADLOCK2	LN 11888-5, "Com-posite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock2_G 60S (Equation)	
USMA_HADLOCK3	LN 11888-5, "Com-posite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock3_G 60S (Equation)	
USMA_HADLOCK4	LN 11888-5, "Com-posite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock4_G 60S (Equation)	

USMA_HADLOCK5	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock5_G60S (Equation)	
USMA_HADLOCK6	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock6_G60S (Equation)	
USMA_HADLOCK7	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock7_G60S (Equation)	
USMA_HADLOCK8	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock8_G60S (Equation)	
USMA_HADLOCK9	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock9_G60S (Equation)	
USMA_HADLOCK10	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock10_G60S (Equation)	
USMA_HADLOCK11	LN 11888-5, "Composite Ultrasound Age"	TID 5003: OB-GYN Procedure Fetus Summary CID 12019: OB-GYN Fetus Summary	Private Code: US_MA_Hadlock11_G60S (Equation)	
CORBPD	LN 11824-0, "BPD area corrected"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group CID 12005: Fetal Biometry Measurements		
BIOP_MOVEMENT	LN 11631-9, "Gross Body Movement"	TID 5009: Fetal Biophysical Profile Section		

BIOP_BREATHING	LN 11632-7, "Fetal Breathing"	TID 5009: Fetal Biophysical Profile Section		
BIOP_TONE	LN 11635-0, "Fetal Tone"	TID 5009: Fetal Biophysical Profile Section		
BIOP_FHR	LN 11635-5, "Fetal Heart Reactivity"	TID 5009: Fetal Biophysical Profile Section		
BIOP_AFV	LN 11630-1, "Amniotic Fluid Volume"	TID 5009: Fetal Biophysical Profile Section		
MA_CORBPD_HADLOCK	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11902-4, BPD, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	
MA_CORBPD_HADLOCK_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11902-4, BPD, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_HADLOCK_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 11902-4, BPD, Hadlock 1984 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_MERZ	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Merz_G60S (Equation)	
MA_CORBPD_MERZ_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Merz_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_MERZ_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Merz_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_LASSER	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Lasser_G60S (Equation)	

MA_CORBPD_LASSER_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Lasser_G60S (Equation)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_LASSER_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_Lasser_G60S (Equation)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_REMPEN	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33083-7, BPD, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	
MA_CORBPD_REMPEN_P2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33083-7, BPD, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	SRT R-00387, 2 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_REMPEN_M2SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33083-7, BPD, Rempen 1991 (CID 12013: Gestational Age Equations and Tables)	SRT R-00388, 2 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_ASUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33079-5, BPD, ASUM 1989 (CID 12013: Gestational Age Equations and Tables)	
MA_CORBPD_TOKYO	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33085-2, BPD, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	
MA_CORBPD_TOKYO_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33085-2, BPD, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_TOKYO_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33085-2, BPD, Tokyo 1986 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)

MA_CORBPD_OSAKA	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33082-9, BPD, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	
MA_CORBPD_OSAKA_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33082-9, BPD, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_OSAKA_M1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	LN 33082-9, BPD, Osaka 1989 (CID 12013: Gestational Age Equations and Tables)	SRT R-00347, 1 Sigma Lower Value of population (CID 226, Population Statistical Descriptors)
MA_CORBPD_JSUM	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_JSUM_G60S (Equation)	
MA_CORBPD_JSUM_P1SD	LN 18185-9, "Gestational Age"	TID 5005: Fetal Biometry Section TID 5008: Fetal Biometry Group	Private Code: MA_BPD_JSUM_G60S (Equation)	SRT R-00346, 1 Sigma Upper Value of population (CID 226, Population Statistical Descriptors)